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John Ware

March 15th 1814

THE

MODERN PRACTICE OF PHYSIC,

EXHIBITING THE

CHARACTERS, CAUSES, SYMPTOMS,

PROGNOSTIC, MORBID APPEARANCES,

AND

IMPROVED METHOD OF TREATING,

THE

DISEASES OF ALL CLIMATES.

BY ROBERT THOMAS, M. D.

OF SALISBURY.

THE SECOND AMERICAN,

FROM THE THIRD LONDON EDITION,

CORRECTED AND CONSIDERABLY ENLARGED.

WITH AN

APPENDIX,

BY EDWARD MILLER, M. D.

PROFESSOR OF THE PRACTICE OF PHYSIC IN THE UNIVERSITY OF NEW-YORK.

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PREFACE.

THE intention of the Author in undertaking this work at first, was to furnish students and young practitioners with a concise but accurate detail of the present improved state of medical practice in a portable form, and in as plain and perspicuous language as possible, noticing, at the same time, the existing doctrines and opinions of the most eminent writers and teachers of medicine; and that it might be generally useful, he determined not to confine himself to the treatment of the diseases of Great-Britain, but to investigate those likewise to which the inhabitants of more temperate and warm climates are liable. The variety of the subjects to be discussed therein, and the numerous publications to be perused on the occasion, rendered the task both arduous and laborious, while a nice and proper discrimination was requisite in distinguishing between matters of fact, and those of mere plausibility.

Close application and perseverance surmounted, however, all difficulties, and the work being at length completed, was submitted to the public a few years ago, in two volumes. The very favourable manner in which it was received, soon made it necessary to commit a second edition to the press. This being carefully revised and enlarged by an addition of much new matter, was published in the year 1807, in a single volume and smaller type, so as to reduce the price of the work considerably.

The sale of this impression, which was a very large one, has been so rapid, as already to require a third edition, which is now presented in a very improved state; for besides having had a large portion of new and highly important information added under almost every head, the diseases have been methodically arranged into classes and orders nearly conformable to the nosology of Dr. Cullen.

Again have the latest writers of celebrity been consulted, and their opinions been noticed; the result of the Author's further experience has been introduced occasionally; the means for arresting the progress of all contagious diseases have been pointed out; the steps to be pursued for preserving the health of Europeans in warm climates, as well as of sailors at sea, have been mentioned; a few observations are offered on the effects of such new remedies as have been introduced into practice; and as both warm and cold bathing, and likewise many of the mineral waters of this and other kingdoms, may be regarded as powerful auxiliaries in the cure of many disorders, their different qualities and virtues have been described.

The advantages to be derived from a work of this comprehensive nature by students and young practitioners, and likewise by those who have not an opportunity of consulting elaborate treatises on distinct subjects, are too obvious to require elucidation; whilst those of longer standing may possibly find it, on many occasions, a useful book of reference to remind them of facts which may have escaped their recollection. Perhaps it may also serve as a good guide to country gentlemen, and particularly the Clergy, who, in cases of emergency, or sudden attacks of illness, either in their own families, or those of the neighbouring poor, may wish to administer some appropriate medicine until the assistance of the profession can be obtained. To answer this purpose the better, a table of the weights and measures used by apothecaries is annexed.

As the work investigates the diseases of all climates, and the greatest pains have been taken to render it as comprehensive, complete, and accurate as possible, the Author trusts that it will be found an useful compendium of the present state of medical practice.

THE SYSTEMATIC ARRANGEMENT
OF
DISEASES
INTO
CLASSES AND ORDERS
WHICH HAS BEEN ADOPTED IN THIS WORK;
TOGETHER WITH
THE EXPLANATION AND DERIVATION OF THEIR NAMES.

CLASS I.

PYREXIÆ (FEBRILE DISEASES,) from πυρ, fire, and εξις, habit *Page* 1

ORDER I.

FEBRES or FEVERS - - - - - - - 1
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Febris Remittens *(Remittent Fever)* - - - - 16
Synochus *(Simple Continued Fever,)* from συνεχω, to continue 21
Synocha *(Inflammatory Fever,)* from ditto - - - 33
Typhus Mitior *(Low or Nervous Fever,)* from τυφος, stupor - 36
——— Gravior *(Malignant or Putrid Fever,)* from ditto - 44
——— Icterodes *(Yellow Fever,)* from τυφος, stupor, and ικτερος, icterus - - - - - - - - - 55

ORDER II.

PHLEGMASIÆ *(Inflammations,)* from φλεγω, to burn - - 73
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Ophthalmia *(Ditto of the Eye,)* from οφθαλμος, the eye - - 89
Otitis *(——— Ear,)* from ους, the ear - - - 99
Cynanche Tonsillaris *(Inflammatory Sore Throat,)* from κυων, a dog, and αγχω, to suffocate - - - - - - 100
——— Parotidæa *(Mumps)* - - - - 104
——— Maligna *(Putrid or Ulcerated Throat)* - - 105
——— Trachealis *(Croup)* - - - - 112
——— Pharyngæa *(Inflammation of the Pharynx)* - - 116
Pleuritis (*Pleurisy,*) from πλευρα, the membrane which lines the lungs 116
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Gastritis *(Inflammation of the Stomach,)* from γαστηρ, the stomach 126
Enteritis (——— *Intestines,)* from εντερον, an intestine 129
Hepatitis (——— *Liver,)* from ηπαρ, the liver - 131
Splenitis (——— *Spleen,)* from σπλην, the spleen - 139
Nephritis (——— *Kidney,)* from νεφρος, the kidney 139
Cystitis (——— *Bladder,)* from κυστις, a bag or bladder 142

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Rheumatismus (*Rheumatism*,) from ῥευματιζω, to be affected with defluxions 155

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Variola (the *Small-pox*,) from *varius*, changing colour, and the skin being disfigured 167
Variolæ Vaccinæ (*Cow-pox*) 180
Varicella (*Chicken-pox*.) The word being a diminutive of *varia* 186
Morbilli (*Measles*) 187
Scarlatina (*Scarlet Fever*) 193
Pestis (*Plague*) 201
Miliaris (*Miliary Fever*) 209
Pemphigus (*Vesicular Eruption*,) from πεμφιξ, a pustule . 212
Urticaria (*Nettle Rash*,) from *urtica*, a nettle . . 214

ORDER IV.

Hemorrhagiæ (*Involuntary Discharges of Blood*,) from αιμορρεαγεω, to throw out blood, from αιμα, blood, and ῥεω, to flow 215
Epistaxis (*Hemorrhage from the Nose*,) from επιςαζω, to distil from 215
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Hæmatemesis (*Vomiting of Blood*,) from αιμα, blood, and εμεω, to vomit 222
Hæmaturia (*Bloody Urine*,) from αιμα, blood, and ῤεον, urine 223
Menorrhagia (*Immoderate Flow of the Menses*,) from μηνια, the menses, and ῥηγνυμι, to break out 224
Hæmorrhois (*Piles*,) from αιμα, blood, and ῥεω, to flow . 229

ORDER V.

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Catarrhus (*Catarrh*,) from καταῤῥεω, to flow down . . 232
Dysenteria (*Dysentery*,) from δυς, bad, εντερον, the intestine, and ῥεω, to flow 238

CLASS II.

NEUROSES (Nervous Diseases,) from νευρον, a nerve 248

ORDER I.

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Paralysis (*Palsy*,) from παῤαλυω, to loose . . . 253

ORDER II.

Adynamiæ (*Defect of Vital Powers*,) from α privative, and δυναμις, power 260
Syncope (*Fainting*,) from συν, with, and κοπτω, to strike down 260
Vertigo (*Giddiness*) 261
Dyspepsia (*Indigestion*,) from δυς, bad, and πεπτω, to concoct 261
Hypochondriasis (*Hypochondriac Affections*,) from ὑποχονδριακος, one who is hipped 268

ORDER III.

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Epilepsia (*Epilepsy*,) from επιλαμβανω, to seize upon, so named from the suddenness of its attack - - - - - 278
Chorea Sancti Viti (*St. Vitus's Dance*,) from χορεια, a dance - 283
Risus Sardonicus (*Sardonic or Convulsive Laughter*) - 286
Tetanus (*Cramp*,) from τεινω, to stretch - - - - 286
Singultus (*Hiccup, or convulsive Motion of the Diaphragm and Stomach*) 292
Pertussis (*Hooping Cough*,) from *per* much, and *tussis*, cough - 293
Pyrosis (*Water Brash*,) from πυρωσις, a burning - - 297
Angina Pectoris, vel Syncope Anginosa - - - 298
Palpitatio (*Palpitation of the Heart*) - - - 302
Asthma (*Asthma*,) from ασθμαζω, to breathe with difficulty - 302
Hydrophobia (*Canine Madness*,) from ὑδωρ, water, and φοβεω, to fear 311
Colica (*Colic*,) from κολον, the colon, one of the large intestines 322
Colica Pictonum (*Dry Belly-ach, or Devonshire Colic*) - 325
CholeraMorbus (*Vomiting and Purging*,) from χολη, bile, and ρεω, to flow 330
Diarrhœa (*Purging*,) from διαῤῥεω, to flow through - - 333
Diabetes (*Excessive Discharge of Urine*,) from δια, through, and βαινω, to pass - - - - - - - 338

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VESANIÆ (*Mental Diseases*,) from *vesania*, madness - 347
Mania (*Madness*,) from μαινομαι, to rage - - - 347
Incubus (*Night Mare*) - - - - - - 361

CLASS III.

CACHEXIÆ (*Cachectic Disease*,) from κακος, ill, and εξις, a habit 362

ORDER I.

MARCORES (*Universal Emaciation*) - - - - 362
Atrophia (*Atrophy*,) from α priv. and τροφη, nutrition - - 362
Phthisis (*Pulmonary Consumption*,) from φθιω, to consume - 365
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Aphtha Chronica (*Chronic Thrush*,) from απτω, to inflame - 389

ORDER II.

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Emphysema (*Emphysema*,) from εμφυσαω, to inflate - - 393
Tympanites (*Tympany*,) from τυμπανιζω, to sound like a drum 394
Hydrops (*Dropsy*,) from ὑδωρ, water - - - 396
Anasarca (*Dropsy of the cellular membrane*,) from ανα, along, and σαρξ, flesh - - - - - - - - 397
Ascites (*Dropsy of the Belly*,) from ασκος, a sack - - 407
——— Ovarii (*Dropsy of the Ovarium*) - - - 407
Hydatids (*Water contained in membranous Bags*,) from ὑδατις, a bladder 407-409

Hydrocele (*Dropsy of the Tunica Vaginalis Testis,*) from ὑδωρ, water, and κηλη, a swelling - - - - *Page* 410
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Hydro-thorax (*Dropsy of the Chest,*) from ὑδωρ, water, and θωραξ, the chest - - - - - - - - - 416
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ORDER III.

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Sibbens, or Sivvens - - - - - - - 473
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Elephantiasis (*Leg swelled like an Elephant's*) from ελεφας, an elephant 477
Lepra (*Leprosy,*) from λεπις, a scale - - - 480
Plica Polonica (*Plaited Hair,*) from *plico*, to entangle - - 484
Scorbutus (*Scurvy*) - - - - - - 487
Icterus (*Jaundice,*) from ικτερος, the jaundice - - - 497

CLASS IV.

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Amaurosis, or Gutta Serena, from αμαυρωσις, obscurity - - 507
Paracusis (*Deafness,*) from παρα, wrong, and ακεω, to hear - 509

ORDER II.

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ORDER III.

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Obstipatio (*Constipation or Costiveness*,) from *obstipo*, to stop up 521
Ischuria (*Suppression of Urine*,) from ισχω, to restrain, and ουρον, the urine - - - - - - - - 523
Dysuria (*Difficulty of voiding Urine*,) from δυς, difficulty, and ουρον, the urine - - - - - - - - 523
Amenorrhœa (*Partial or total Obstruction of the Menses from other Causes than Pregnancy*,) from α priv. μηνιαιος, monthly, and ῥεω, to flow - - - - - - - - 526
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DISEASES OF THE PUERPERAL STATE. 607

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Peritonitis (*Inflammation of the Peritonœum,*) from περιτεινω, to stretch round - - - - - - - - 619
Febris Puerperarum (*Puerperal, or Child-bed Fever*) - 623

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Eruptiones (*Eruptions*) - - - - - 639
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Vomitus (*Vomiting*) - - - - - 644
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Convulsiones - - - - - - - - 654
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EXPLANATION

OF THE

TABLE OF WEIGHTS AND MEASURES

USED BY APOTHECARIES.

The Pound, or ℔.	contains	12 Ounces.
Ounce, or ℥j.		8 Drachms.
Drachm, or ʒj.		3 Scruples.
Scruple, or ℈j.		20 Grains.

The Grain is equal to that of the goldsmiths.

The Measures employed in Pharmacy are the common Wine Measure.

A Gallon	contains	8 Pints.
The Pint, or ℔.		16 Ounces.
The Ounce, or ℥j.		8 Drachms.

By a spoonful is understood, in the London Dispensatory, the measure of half an ounce; and in the Edinburgh, half an ounce weight in syrups, and three drachms in distilled waters. The doses of medicines ordered in this work are, however, regulated by the former, and are intended for adults, unless particularly specified for children, or infants.

PRACTICE OF PHYSIC.

CLASS I.

OF

PYREXIÆ OR FEBRILE DISEASES.

THE character assigned by Dr. Cullen to this class of diseases is, increased heat and frequency of the pulse, after a shivering, accompanied with a disturbance in many of the functions, and diminution of strength, especially in the limbs.

ORDER I.

FEVERS OR FEBRES.

IT is impossible to give a concise and proper definition of the disease known by the name of fever, as it has no symptom invariably attendant on it, which can point out its real nature or essence. The pulse is exceedingly various in such cases: it may be small, weak, slow, contracted, and unequal; or it may be strong, quick, full, and regular; hard or soft, according as the fever is at the commencement, increase, height, or in the remission and termination; or as the genus and nature of the fever may chance to differ. So, also, the heat may be equally diffused, or confined to particular parts: sometimes the external parts are cold, with a sense of internal heat; at others, there is general heat or cold over the body; and sometimes the heat is not greater than what is natural. Sometimes the face is pale, and at others it is red or swelled; now it has the natural look, and now the reverse of this. The eyes are heavy, languid, and sad; or red, and impatient of light; they are prominent, distorted, or wild; shining, dull, or ghastly; sometimes bedewed with tears, and deprived of their usual lustre. The tongue is generally dry, chapped, scabrous, red, white, or variegated; often covered with mucus; but not unfrequently moist and natural, without any thirst. The breathing is frequent, hot, unequal, or impeded; the breath is often offensive. The appetite is usually extinct; but in a few instances some desire for food remains. Some-

times the urine is crude and watery; at others, red and thin; or often thick, soon becoming turbid, and depositing a sediment: sometimes it is of a natural appearance. To these symptoms are added pains in different parts of the body; depression of strength, and watchfulness; or, on the other hand, heaviness, stupor, or imbecility of mind, delirium, diarrhœa, or constipation, vomiting, tension of the hypochondria, subsultus tendinum, emaciation, and other affections arising with the fever itself, or gradually supervening to it.

Besides the ordinary febrile symptoms of hot skin, irritated circulation, foulness of the tongue, thirst, and deficient or irregular secretions, preceded by lassitude, heaviness, listlessness, and rigors, there are pains in the head, generally of the throbbing kind, and extending along the continuation of that portion of the brain which is lodged in the channel of the spine; increased heat of the head (easily perceived on compressing it with the hands), even though the body and extremities be cold; unusual throbbing of the arteries in the temples and neck; suffusion of the eyes, and an altered expression of features, easily observed, but difficult to be described, together with disturbance of all the functions immediately belonging to the brain. If to these be added irregularity in regard to sleep, and watching, which, though common to many diseases, belongs in a peculiar manner to the one under our investigation, we shall have characters always sufficient to enable us to detect the presence of fever in the system, and affording at the same time the clearest indications of its nature.

It is only from a diligent examination of these appearances conjoined together, that we are enabled to judge of the presence or absence of fever; not from any of them taken singly. By making a general assemblage of the symptoms, we may venture to call it a disease which seems to affect every part of the body, and in which there usually prevails a difficulty of performing some of the vital and animal functions.

Fevers are usually divided into intermittents, remittents, and continued, on account of their taking up different times in their natural duration: some being compounded of a number of paroxysms, following each other in a regular succession at some distance of time, as happens in intermittents: in others, a fresh paroxysm comes on immediately on the crisis of the other, so as hardly to leave the patient entirely free of fever, as happens in remittents; and in others, there is such a quick succession of paroxysms, that the one comes on before there is any visible abatement of the febrile symptoms, as in continued fevers.

In some instances of the last-mentioned fever, the remissions and exacerbations are so inconsiderable as not easily to be perceived, which has induced a few practitioners to conclude, that there is a species of fever which subsists for several days together, and which is composed only of a single paroxysm; but we may safely presume that no such fever ever existed: on the contrary, we may be well assured, that every continued fever consists of a repetition of paroxysms, in the manner just mentioned.

Now and then we meet with a fever consisting of only a single paroxysm, and which goes through its course in a few hours, as in the ephemera simplex; but this does not very frequently occur.

Continued fevers have been noticed to be of great diversity, by ancient nosologists; but modern ones have limited them, very properly, either as they shew an inflammatory irritation, or as they point out an affection of the nervous system, and in which the powers of sense and motion are particularly impaired. The distinctions of inflammatory and nervous fevers are therefore those now generally made use of; the former being known by the title of Synocha, and the latter by that of Typhus. A combination of these two genera seems, however, to be that form of continued fever which is most prevalent in this climate, and this I shall treat of under the appellation of Simple Continued Fever, or Synochus.

A variety of continued fever has been noticed by some physicians under the title of Synochus Biliosa, where, in addition to the other febrile symptoms, we meet with a redundant secretion and vitiated state of the bile, giving rise to a vomiting of dark green matter, or diarrhœa, and excited by an exposure to extreme heat of weather. In some cases, however, the bowels are very torpid, and the motions procured even by purgatives, are of a hard consistence, and dark as pitch; but as this variety of fever seldom appears under a continued type, and rather assumes a remittent form, it ought, undoubtedly, to be considered as a remittent.

Several species are comprehended under the head of Typhus; they do not, however, imply any specific difference, but seem to arise either from a different degree of power in the cause; from different circumstances of the climate or season in which they happen; from some peculiarity in the constitutions of the persons affected; or from a peculiar state of the fluids predisposing to prutrescency.

As Hectic Fever cannot be considered as an idiopathic disease, but merely as a symptom of some other, and of phthisis in particular, it is not noticed under a distinct head, but under that of Pulmonary Consumption.

Of INTERMITTENT FEVERS.*

THE title of Intermittents is applied to that kind of fever which consists of a succession of paroxysms, between each of which there is a distinct and perfect intermission from febrile symptoms, or an apyrexial period.

Different names have been applied to this fever, according to the distance of time observed between the periods of its return. When it comes on within the space of every twenty-four hours, it is called a

* In the former editions of this work, intermittent and remittent fevers were placed after those of the continued kind; but with the view of adhering to the nosological arrangement of Dr. Cullen in this instance, the precedence is given to them in the present edition.

quotidian; when it returns every other day, or there is a space of forty-eight hours between its attacks, it is called a tertian; and when it attends on the first and fourth day, with an interval of seventy-two hours, it is named a quartan. That under the tertian type is most apt to prevail in the spring, and is, indeed, the most frequent form of the disease. The quartan is the most obstinate and dangerous, being most prevalent in autumn. The quotidian is more likely than the others to assume the continued type.

Of the quotidian, tertian, and quartan intermittents, there are several varieties and forms; as the double tertian, having a paroxysm every day, with the alternate paroxysms similar to one another. The double tertian, with two paroxysms on one day, and another on the next. The double quartan, with two paroxysms on the first day, none on the second and third, and two again on the fourth day. The double quartan, with a paroxysm on the first day, another on the second, but none on the third. The triple quartan, with three paroxysms every fourth day. The triple quartan, with a paroxysm every day, every fourth paroxysm being similar.

When these fevers arise in the spring of the year, they are called vernal; and when in autumn, they are known by the name of autumnal. Intermittents often prove obstinate, and are of long duration, in warm climates; and they not unfrequently resist every mode of cure, so as to become very distressing to the patient, and often give rise to other chronic complaints, but more particularly anasarcous swellings, and an enlargement of the liver or spleen.

It seems to be pretty generally acknowledged, that marsh miasma, or the effluvia arising from stagnant water or marshy ground, when acted upon by heat, is the most frequent exciting cause of this fever. In marshes, the putrefaction of both vegetable and animal matter is always going forward, it is to be presumed; and hence it has been generally conjectured, that vegetable or animal putrefaction imparted a peculiar quality to the watery particles of the effluvia arising from thence. We are not yet acquainted with all the circumstances which are requisite to render marsh miasma productive of intermittents; but it may be presumed, that a moist atmosphere has a considerable influence in promoting its action.

A watery poor diet, great fatigue, long watching, grief, much anxiety, debility, exposure to cold, lying in damp rooms or beds, wearing damp linen, a warm, moist, or cold damp atmosphere, the suppression of some long-accustomed evacuation, the recession of eruptions, and preceding disease, have been ranked among the exciting causes of intermittents; but it is more reasonable to suppose that these circumstances act only by inducing that state of the body which predisposes to these complaints. By some, it has been imagined that an intermittent fever may be communicated by contagion; but this supposition is by no means consistent with general observation.

One peculiarity in this fever is, its great susceptibility of a renewal from very slight causes, as from the prevalence of an easterly wind, or from the repetition of the original exciting cause. It would appear

likewise, that a predisposition is left in the habit, which favours the recurrence of the complaint. In this circumstance, intermittents differ from most other fevers, as it is well known, that after a continued fever has once occurred, and been completely removed, the person so affected is by no means so liable to a fresh attack of the disorder, as one in whom it had never taken place.

We have not yet attained a certain knowledge of the proximate cause of an intermittent fever; but a deranged state of the stomach and primæ viæ is that which is most generally ascribed.

Each paroxysm of an intermittent fever is divided into three different stages, which are called the cold, the hot, and the sweating stages or fits.

The cold stage commences with languor, a sense of debility, and sluggishness in motion, frequent yawning and stretching, and an aversion to food. The face and extremities become pale, the features shrink, the bulk of every external part is diminished, and the skin over the whole body appears constricted, as if cold had been applied to it. At length the patient feels very cold, and universal rigors come on, together with pains in the head, back, loins, and joints, nausea, and vomiting of bilious matter; the respiration is small, frequent, and anxious; the urine is almost colourless; sensibility is greatly impaired; the thoughts are somewhat confused; and the pulse is small, frequent, and often irregular. In a few instances, drowsiness and stupor have prevailed in so high a degree as to resemble coma or apoplexy; but this is by no means usual.

These symptoms abating after a short time, the second stage commences with an increase of heat over the whole body, redness of the face, dryness of the skin, thirst, pain in the head, throbbing in the temples, anxiety, and restlessness; the respiration is fuller and more free, but still frequent; the tongue is furred, and the pulse has become regular, hard, and full. If the attack has been very severe, then perhaps delirium will arise.

When these symptoms have continued for some time, a moisture breaks out on the forehead, and by degrees becomes a sweat, and this, at length, extends over the whole body. As this sweat continues to flow, the heat of the body abates, the thirst ceases, the urine deposits a sediment, respiration is free and full, and most of the functions are restored to their ordinary state: the patient is, however, left in a weak and wearied condition. This constitutes the third stage.

Having pointed out the phenomena usually attendant on a paroxysm of intermittent fever, and likewise their mode of succession, it may not be unworthy of observation to notice that in different cases they may prevail in different degrees; that the series of them may be more or less complete; and that the several stages, in the time they occupy, may be in different proportions to one another.

Such a depression of strength has been known to take place on the attack of an intermittent fever, as to cut off the patient at once; but an occurrence of this kind is very uncommon.

Patients are seldom destroyed in intermittents from general inflam-

mation, or from a fulness of the vessels either of the brain or of the thoracic viscera, as happens sometimes in a continued fever; but when their duration is of any length, they are apt to induce other complaints, such as loss of appetite, flatulency, scirrhus of the liver, dropsical swellings, and general debility, which in the end now and then prove fatal. In warm climates particularly, intermittents are very apt to terminate in this manner if not speedily removed: and in some cases they degenerate into continued fevers.

When the paroxysms are of short duration, regular in their recurrence, and leave the intervals quite free, we may expect a speedy recovery; but when they are long, violent, and attended with much anxiety, and delirium, the event may be doubtful. Other unfavourable symptoms are, great prostration of strength, vertigo, fetid excretions, the presence of dysentery, cholera morbus, enlargements of the liver and spleen, inducing dropsy or jaundice, and convulsions occurring during the paroxysm preceded by coma. Relapses are very common to this fever at the distance even of five or six months, or even a year; and autumnal intermittents are more difficult to remove than vernal ones.

Dissections of those who have died of an intermittent, shew a morbid state of many of the viscera of the thorax and abdomen; but the liver, and organs concerned in the formation of bile, as likewise the spleen and mesentery, are those which are usually most affected.

The indications of cure in the treatment of intermittents are, first, to put as speedy a stop as possible to the fit, when it has taken place; and, secondly to prevent its return, at the usual, or any after period.

To effect the first of these intentions, it has been customary to administer a gentle emetic* during the cold stage; the operation of which being over, recourse is then to be had to warm diluent liquids, artificial warmth, the pediluvium, or fomentations to the feet, and cordial diaphoretics.† These often failing, however to put a stop to the fit, has induced modern practitioners to search after more powerful and certain remedies.—Doctor Trotter mentions, in his Medicina Nautica, that finding intermittents became very frequent on board the Vengeance, one of the Channel fleet under Earl Howe, he was resolved to try the full effects of opium in preventing the fit. He reports, the moment

* ℞. Pulv. Ipecac. gr. viij.—xv.
Antimon. Tartarisat. gr. j. M.
ft. Pulvis.
Vel
℞. Vini Ipecacuanhæ ʒfs.—j.
——Antimon. Tartarisat. gutt. xv.
ft. Haustus.

† ℞. Misturæ Camphor. ʒxij.
Ammoniæ gr. iij.
Vini Antimon. gutt. xij.
Syrup. Simpl. ʒj. M.
ft. Haustus secunda quaque hora sumendus.
Vel
℞. Kali Præparat. ℈j.
Succi Limon. q. s. ad faturationem.
Aq. Cinnam. ʒij.
— Puræ ʒj.
Antimon. Tartarisat. gr. i-6
Syrup. Cort. Aurant. ʒj. M.
ft. Haustus.

the sick felt the first approach of an attack, they were sure to run to the cockpit for relief. A dose of tinctura opii was then administered; if the first dose did not bring on some warmth in the space of ten or fifteen minutes, from twelve to twenty drops more were given. He never gave less than thirty drops the first time, and never had occasion to go beyond sixty in the space of an hour, for in no case did the remedy fail, we are informed, to give relief in this time.

He further reports, that in a few minutes from the exhibition of the opiate, an exhilaration of spirits was perceived, which was quickly followed by a relaxation of the surface, the countenance looked cheerful, and a flush was spread on the cheek. The pulse, from being weak, quick, and sometimes irregular, became less frequent, full, and equal; an agreeable warmth was diffused over the whole frame, and every unpleasant feeling vanished, sometimes in a quarter of an hour. Sleep now and then followed a large dose; but this did not in general happen.

As soon as any symptoms indicated another paroxysm, whether on the following day or not, till the tertian interval, the tinctura opii was repeated in the same manner as in the former fit, and always with equal success; so that the patient seldom experienced much trembling or shaking. He adds, the second paroxysm was commonly an hour or two later in the day than the preceding one, and but few instances occurred where any indisposition indicated a third attack at the expected period of accession. The very patients themselves, he observes, were not a little surprised at the sudden change in their sensations, by so small a quantity of medicine, and that they were certainly the completest cures which ever came under his observation.

In the Medical Commentaries for the years 1794 and 1797, published by Doctor Duncan, we are informed by Mr. George Kellie, an ingenious navy surgeon, of the good effects of compression by the tourniquet, in stopping the cold fit of intermittents, and several instances are related of this curious fact. The plan pursued by him was to apply the instrument on one thigh and on one arm of opposite sides, at the same time. In two minutes after the application of the tourniquets, the shaking and other symptoms of the cold stage entirely ceased, a mild hot stage was immediately induced, and the patient found himself quite relieved. After suffering the instruments to remain on for about fifteen minutes, they were removed, and the cold symptoms did not return.

From various trials which Mr. Kellie made, he concludes, first, that if at any time during the cold fit of an intermittent, tourniquets be so applied as to obstruct the circulation in two of the extremities (for example, one on the subclavian, and the other on the iliac of opposite sides,) the hot fit will be induced in about three minutes afterwards: secondly, that if the tourniquets be applied previous to the accession of the paroxysm, the cold stage will be entirely prevented; and thirdly, that where the cold stage of an ague is either thus shortened, or altogether prevented, the following hot stage will be rendered both milder and of shorter duration.

Vitriolic æther administered in the quantity of a drachm for a dose, on the approach of the cold fit of an intermittent, has been found in some instances to prevent the accession of the hot one. In the fifth volume of Medical Facts and Observations, two cases are recorded by a Mr. Davidson of the efficacy of this remedy, where the bark and other medicines which were previously used, had failed. The first dose is not to be expected to remove the disease at once, and therefore on the approach of the next fit it ought to be repeated. During the intervals, the bark and other tonics are to be taken.

Might not the affusion of cold water be employed with some prospect of success, two or three hours before the expected accession of the paroxysm, or immediately after the hot fit is completely formed? Indeed, I have tried it, and with some advantage, in the former instance.

On the authorities I have mentioned, we are induced to presume that we have a knowledge of powerful remedies for cutting short the cold fit of an intermittent; or, should the hot fit succeed, that it will certainly be rendered both milder and of shorter duration each time of its return. Should we, however, be disappointed in our expectations, and the febrile symptoms run high, we may then advise the use of gentle diaphoretics, in small and frequently repeated doses, as prescribed under the head of Simple Continued Fever, or below;* and to increase their effect, the patient must be directed to drink frequently of tepid diluting liquors. If there is any inflammatory diathesis, nitre may be added to these medicines.

If he is incommoded by a cough, attended with a pain in the side affecting the breathing, we may recommend the application of a blister; and should these affections not be relieved by the remedy, it may not be improper to take away a small quantity of blood. If the head becomes much affected either during the paroxysms or the intermissions, the application of a blister to the back, and of leeches to the temples, will be advisable, laying opiates aside.

Should there be great coldness of the legs, with a sinking of the pulse, cataplasms of mustard may be applied to the soles of the feet.

In Dr. Lind we find an advocate for the exhibition of opium like-

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* ℞. Succ. Limon. ℥ß.
Kal. Præparat. ℈j.
Aq. Menth. Sativ. ℥j.
Antimon. Tartar. gr. i-6.
Syrup. ℥ij. M.
ft. Hauſtus 2da quaq. hora repetendus.

Vel

℞. Aq. Ammon. Acetat. ℥iij.
— Cinnam. ℥ij.
— Puræ ℥v.
Vin. Antimon. gutt. x.
Syrup. Cort. Aurant. ℥j. M.
ft. Hauſtus.

Vel

℞. Pulv. Antimonial. gr. ij.
—— Contrayerv. gr. x. M.
ft. Pulv. 4ta quaque hora ſumendus.

Vel

℞. Pulv. Ipecac. C. gr. x.
Capiat ſecunda quaque hora.

wise in the hot fit. He tells us he has observed, that, if taken during the intermissions, it had not the least effect either in preventing or mitigating the succeeding paroxysm; when given in the cold fit, it once or twice seemed to remove it; but that when administered half an hour after the commencement of the hot fit, it generally afforded immediate relief. When given in the hot fit, he observed the following effects to follow: 1st, It shortened and abated the fit; and this with more certainty than an ounce of the bark was found to affect the disease. 2d, It generally gave a sensible relief to the head, took off the burning heat of the fever, and occasioned a profuse sweat. This sweat was attended with an agreeable softness of the skin, instead of the burning sensation which affects patients sweating in the hot fit, and was always more copious than in those who had not taken opium. 3d, It often produced a soft and refreshing sleep to a patient tortured in the agonies of the fever, from which he awaked bathed in sweat, and in a great measure free from all complaints.

The Doctor has always observed, that the effects of opium are more uniform and constant in intermitting fevers, than in any other disease, and are there more quick and sensible than those of any other medicine. An opiate thus given soon after the commencement of the hot fit, by abating the violence, and lessening the duration of the fever, preserves the constitution so entirely uninjured, that, since he used opium in agues, a dropsy or jaundice has seldom attacked any of his patients in those diseases. When opium did not immediately abate the symptoms of the fever, it never increased their violence: on the contrary, most patients reaped some benefit from an opiate given in the hot fit, and many of them bore a larger dose at that time than they could at any other. Dr. Lind offers it as his opinion, that opium in this disease, is the best preparative for the bark; as it not only produces a complete intermission, in which case alone that remedy can be safely administered, but occasions such a salutary and copious evacuation by sweat, as generally to render a much less quantity of bark requisite.

When we obtain an intermission, the Peruvian bark is to be given during the intervals, in large doses. One or two drachms of the powder may be taken every hour, if the stomach will bear so much, as the benefits to be expected from this medicine greatly depend on a large quantity being administered in a short space of time; for five or six ounces of bark taken in a few days, will be attended with a much better effect than perhaps as many pounds taken in the course of some weeks. If it will not sit easy on the stomach in substance, we must be content to substitute a decoction or infusion of it, or we may give the extract,* joining a few drops of sulphuric acid.

Where the intermissions between the paroxysms are long, as in the tertian and quartan types, we should delay giving the bark until within eight hours or so, of the accession of the cold fit.

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* ℞. Extract. Cinchon. gr. xv.
Decoct. Ejusdem. ℥jfs.
Tinct. Cort. Aurant. ʒj. M.
fr. Haustus 2da hora sumendus.

If all the forms which have been mentioned are nauseated and rejected by the stomach, we may advise the bark to be given in clysters, in which form it likewise proves very efficacious. For this purpose about a drachm of its extract, dissolved in a sufficient quantity of water, with the addition of a few drops of tinctura opii, in order to its being longer retained, will be most proper. With children who cannot be prevailed on to take the bark, we may administer it with much efficacy in this way, repeating the clyster every four hours. For the cure of intermittents in children, the bark has likewise proved effectual when applied externally, by putting the powder of it into a quilted waistcoat.

In most intermittents it would perhaps be the best practice to unite opium with the bark, as it would enable the stomach to bear much larger doses of the latter, and likewise add very considerably to its good effects.

Various substances of either an astringent, stimulant, or aromatic nature, such as alum, the various preparations of iron, &c. nutmeg, and snake-root, have been joined with the bark, with a view of increasing its powers; but as these lessen its dose by their bulk, it will be best to give it by itself, unless it occasions a purging, and then about eight or ten drops of tinct. opii, or about a drachm of the tinct. e kino, may be added to each dose. On the contrary, should it produce costiveness, some gentle laxative may be taken occasionally, such as a few grains of rhubarb.

In intermittents of long continuance, where the person is advanced in years, and weak, the habit phlegmatic, the season rainy, and the situation damp, it will be proper to make an addition of snake-root and some warm aromatic† to the bark, and when the symptoms have more of an inflammatory tendency, it may be given with prepared kali‡.

In cold climates, it will in general be advisable to wait for a perfect and regular intermission before we give the bark: but in warm ones, where intermittents are apt to degenerate into continued fevers or remittents, and in which the habit is more irritable and weak, it will be right to administer it, even on the most imperfect intermission, or slightest remission.

In all cases of intermittents, it will not be sufficient that the recurrence of paroxysms be stopped for once or twice by a use of the bark; a relapse is commonly to be expected, and it should therefore be prevented by a continued exhibition of the medicine at proper intervals; even for some weeks after the disease appears to be removed, it may be advisable to take a little of it occasionally, particularly in damp weather, or during the prevalence of an easterly wind.

† ℞. Pulv. Cort. Cinchon. ℥j.
Coq. in
Aq. Font. ℔j. ad ℔fs.
Colat. adde
Tinct. Serp. Virg.
—— Card. C. āā ℥vj. M.
Capiat Cochl. ij. magna pro dos.

‡ ℞. Decoct. Cort. Cinchonæ ℥jfs.
Kali Præparat. gr. x. ad xv.
Syrup. Althææ ℥ij. M.
ft. Hauſtus.

Various species of bark are now to be met with among the venders of this medicine, and we have been favoured with the report of several gentlemen* of eminence in their profession, giving a decided preference to the yellow, as possessing virtues far superior to the red, or any other species yet introduced into use.

From various trials made with it, these physicians report, that it is bitterer to the taste, and more astringent, than the other sorts; that a decoction and infusion of it are less liable to undergo fermentation; and that in every instance in which it was used by them, it invariably proved successful. Half a drachm of the yellow bark in powder, given every two hours, has in general been found sufficient for the cure of an intermittent; hence they have presumed that it possesses nearly a double febrifuge power to that of common bark. Of its good effects I can myself bear testimony, having used it with the most decisive success.

During my residence in the West Indies I met with many cases that resisted the powers of cinchona, and that gave way to a use of quassia. Indeed, so sovereign a remedy was this found in intermittents, and so easy was it to be obtained, that it was pretty generally substituted by all practitioners for the cinchona in common cases on the plantations. The best way of administering it is in the form of infusion or decoction, as below.† The Angustura bark is another remedy which I have often used with success.

Other substitutes for this medicine have been mentioned and advised. In the sixth volume of Medical Facts and Observations, published in the year 1795, we are favoured by Dr. Roxburgh with an account of a new species of the swietenia, (mahogany,) which from repeated trials, and experience of its effects, he proposes as a substitute for the cinchona. He calls it the swietenia febrifuga, and says, its astringent and bitter qualities are more intense than those of the Peruvian bark, and that its active parts are much more soluble than those of the other, particularly in watery menstruums. He adds, that it contains a much larger share of active (bitter and astringent) powers than Peruvian bark; that watery preparations of it remain good much longer than similar ones of the latter; that spirituous and watery preparations of it bear being mixed in any proportion without decomposition; and that its antiseptic powers are stronger.

A great variety of other barks, such as the cinchona Jamaicensis, discovered by Dr. Wright; the cinchona Charibbæa or St. Lucia bark, the Tellicherri bark, &c. have been substituted for the Peruvian with a very good effect when this could not be obtained. As a tonic and febrifuge, the willow bark has of late years been much employed with

* Dr. Relph, Dr. Saunders, and Dr. Babington, physicians to Guy's Hospital; Dr. Lind, of Haslar Hospital; and the late Dr. Woodville.

† ℞. Quassiæ ʒij. Coq. ex Aq. Fontan. ℔j. ad ℔ss. Colat. adde Tinct. Card. C. ʒj. M. Sumat Cochl. iij. 3tia quaque hora.

Vel

℞. Quassiæ ʒij. Aq. Bullient. ℥viij. Post horam unam. Col. et adde Tinct. Colomb. ʒj. M.

considerable success both in England and on the continent. The varieties of the willow which have been noticed by botanical writers are very numerous; but the salix latifolia or caprea (broad-leafed willow bark) seems to possess virtues greatly superior to the others. A late writer* has endeavoured indeed to convince us, that it has a superior efficacy above the cinchona in various diseases, more particularly that branch of the healing art termed medical surgery. The decoction is the form to which this practitioner gives the preference: one ounce and a half of the dried and pounded bark boiled for a quarter of an hour in two pints of soft water. Of this, the ordinary dose is two or three large spoonfuls, given three or four times a day.

The radix rhataniæ is another substitute, which has lately been proposed for the cinchona; but from the few trials I have made of it in intermittents, I am convinced that it is by no means deserving of the encomiums which have been lavished on it by Dr. Rees. Twenty grains of the powder may be considered as a moderate dose; and it may also be employed either in the form of extract, decoction, or tincture.

All these barks, probably, owe their efficacy to one common principle; but what this is, it may be difficult to ascertain. Their febrifuge power has been attributed by some principally to the tannin, which they all contain in a greater or less quantity; but this opinion must be erroneous, as it appears from Mr. Davy's experiments that very little tannin is contained in the cinchona, or in the other barks supposed to be possessed of febrifuge properties.

In intermittents, where, from flatulency, a distention of the abdomen, or a retention of fæces, it becomes necessary to have recourse to laxatives, we may employ something of a warm aromatic nature† which should be taken during the intermissions, so that its operation shall have ceased before the accession of the next paroxysm.

It often happens, when intermittents have continued a long time, that scirrhosities of the liver or spleen take place, which are vulgarly denominated ague-cakes. These complaints have been attributed to an improper use of the bark; but they evidently arise from the great quantity of blood, which is thrown on these parts during the cold fit, which distends them, and so produces a scirrhosity in them, and which we often find it difficult to remove, although a stop is put to the fever. In such cases it may be proper to join deobstruents with the bark, as below.‡ If these do not answer, we must have recourse to mer-

* See Wilkinsen's Experiments on the broad-leafed Willow-Bark.

† ℞. Pulv. Rhabarb. gr. xv.
—— Aromat. gr. v.
Kal. Vitriolat. gr. xij. M.
ft. Pulvis.

Vel

℞. Infus. Sennæ ℥jfs.
Tinct. Rhabarb. ℥ij.
—— Lav. C. ℥j. M.
ft. Haustus.

‡ ℞. Pulv. Cort. Peruv. ℥j.
—— Rhabarb. ℥jfs.
Natri Præparat. ℥ij.
Syrup. Zingib. q. s. M. ft. Elect.
Cujus sumat Cochl. min. ter quaterve in die.

cury.* A small dose should be given every night, so as just to affect the mouth, but the tonic medicines are to be continued. If the patient cannot take this remedy internally, he must substitute its external use in the form of unction, rubbing into the groins about a scruple, if an adult, of the unguentum hydrargyri fortius every night at bed-time.

In warm climates particularly, these swellings are often to be met with as the consequence of long-continued intermittents; but of these, more particular mention is made under the head of Chronic Inflammation of the Liver.

These tumours, by pressing on the ramifications of the vena portarum, which passes into the liver, and branches in the manner of an artery, prevent the blood from returning from the abdominal viscera with the same facility that it commonly does. The passage of the blood being thus retarded, occasions a greater extravasation of lymph in the cavity of the abdomen, so that the ordinary exertion of the absorbents is not sufficient to take up the whole lymph. Thus an ascites takes place; and in this case we must have recourse to the means advised under that head.

Dropsy likewise arises sometimes from mere weakness, without any tumour of the abdominal viscera, and occasioned by the long continuance of the disease. In these instances, it may be removed by exhibiting the bark of the cinchona together with stomachic bitters, diuretics, and chalybeates. As the strength returns, and the patient recovers his health, the dropsical appearances will diminish by degrees.

When tumours are formed in any of the abdominal viscera, it not uncommonly happens, that they press on the ductus communis choledochus, the duct of the gall-bladder, the hepatic duct, or the pori biliarii, by which means the bile is prevented in part or wholly from getting into the duodenum; it is therefore absorbed, and produces jaundice of itself, without any concomitant dropsical symptom, or along with it, ascites. When this happens the disease is generally fatal.

The blood, by being determined from the blood-vessels upon the abdominal viscera, when the patient becomes weak after an intermittent has continued for some months, sometimes occasions an increased secretion from the glands of the intestines, and thus gives rise to a diarrhœa. This affection usually proves more severe during the remissions and intermissions; and less severe, or ceases altogether, at the time of the accession and during the time of the paroxysm. Such diarrhœa tends to increase the weakness considerably, and not unfrequently occasions dropsical appearances. At first, œdematous swellings appear in the lower extremities; these increase, rising up to the thighs, and then to the integuments of the abdomen. Ascites also

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* ℞. Calomelanos gr. j.
Confect. Opiat. gr. iij. M.
fiat Pilula omni nocte sumenda.

℞. Pilul. ex Hydrargyro gr. iij.
—— ex Opio gr. ij. M.
ft. Pilula.

takes place. If astringent remedies be employed, so as to put a stop to the diarrhœa, the dropsical appearances usually increase, and the intermittent continues to recur, although often very obscurely and very irregularly. If the diarrhœa be permitted to go on, or if it has been stopped, and is allowed to return by leaving off the astringents, the weakness increases in such a degree as to destroy the patient. If the bark be exhibited, it often increases the diarrhœa without having the effect of preventing irregular returns of the attacks or exacerbations. In this case Dr. Fordyce* says it will be best to clear the primæ viæ, by employing about twenty-five grains of rhubarb; after its operation is over, to exhibit cinchona in pretty considerable quantity, such as a drachm every three hours, and to give at the same time a grain of ipecacuanha, with fifteen drops of tinctura opii, together with a moderate quantity of any of the warmer spices every four hours.

In some cases of intermittents, which have continued a great length of time, owing to their having been entirely neglected in their beginning, or where the bark has failed to procure the desired effect, preparations of iron and copper have been administered with success. The zincum calcinatum given in the dose of two grains thrice a day, has removed obstinate intermittents, when the usual remedies have failed.

The zincum vitriolatum has likewise been administered with much success. The cuprum vitriolatum given in doses of a quarter or half a grain every four or six hours, is also said to have proved very efficacious in some cases of obstinate intermittents. As a tonic, the cuprum ammoniacale† has been given with advantage. All these may be employed along with a decoction of the cinchona, or any of the other tonic bitters which have been mentioned.

Arsenic has been recommended of late as a remedy in intermittents, and it is undoubtedly a very powerful medicine. Dr. Fowler of York seems to have been the first physician to advise this medicine in agues, and on his recommendation many practitioners have used it, agreeably to his directions, with the most pointed success. The preparation Dr. Fowler advises is as follows:

Take 64 grains of white arsenic reduced to a very fine powder, and the same quantity of vegetable alkali; mix these together; add half a pound of distilled water, and let it boil in a Florentine flask in a sand heat, till the arsenic is completely dissolved: half a pound of compound spirit of lavender is then to be added to it, and as much more distilled water as makes the whole solution amount to a pound. The dose of

* See his Fourth Dissertation on Fever.

† ℞. Cupr. Ammon. ℈j.
Mic. Panis ʒij.
Syrup. Cort. Aurant. q. s. M. fiant pilul. No. xxiv. Capiat j. *vel* ij.—iij. (sensim augendo dosem) hora decubitus quotidie.

this* is from two to twelve drops, once, twice, or oftener in the day, according to the age, strength, &c. of the patient. Eight days administration of the medicine, in the manner just mentioned, will, it is said, generally be found sufficient for the radical cure of an intermittent.

Dr. Darwin thinks that a saturated solution of arsenic in water is preferable to Dr. Fowler's operose preparation. He directs this as follows: Put much more white arsenic (See Zoonomia, vol. ii. p. 499, article Sorbentia) reduced to powder into a given quantity of distilled water, than can be dissolved in it. Boil it for half an hour in a Florence flask or a tin saucepan; let it stand to subside, and filter it through paper. Ten drops from a two-ounce phial, given thrice a day, will be a full dose for a grown person, but it will be best to begin with five.

Vomitings, gripings, swellings, and the loathing of food, are the troublesome symptoms now and then produced by a use of the arsenical solution. They however disappear generally on a discontinuation of the drops, or only require the exhibition of gentle opiates, or some warm cathartic, such as the tincture of rhubarb.

From the observations which have been made on the use of arsenic in agues, there seem just grounds for believing it to be the most powerful of all the medicines which have been recommended in these complaints. In Lincolnshire, which is a fenny country, where agues are very prevalent, it is universally used, and with the most uniform success. Military and naval surgeons will find the arsenical solution a valuable substitute for the bark, when their store of this is small or exhausted. Arsenic has long been administered by empirics with the greatest success in intermittents, under the appellation of the ague-drop.

The manner in which arsenic acts in curing intermittent fevers, Dr. Darwin thinks, cannot be by its general stimulus, because no intoxication or heat follows the use of it; nor by its peculiar stimulus on any part of the secreting system, since it is not in small doses succeeded by any increased evacuation or heat, and must therefore exert its power on the absorbent system. He suspects its success in the cure of intermittents to depend on its stimulating the stomach into stronger action, and thus by the association of this viscus with the heart and arteries prevents the torpor of any part of the sanguiferous system.

A combination of the arsenical solution with cinchona in substance, decoction, or infusion, is likely, I think, to prove a valuable remedy in cases of obstinate intermittents, and where either of these medicines administered singly might fail. Indeed in one or two such cases which

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* ℞. Solutionis Arfenical. gutt. iij.—xij.
Decoct. Cinchon. ℥x.
Tinct. Cort. Aurant. ℥ij.
——Opii gutt. xiij. M.
ft. Hauftus ter in die fumendus.

℞. Infus. Rad. Colomb. ℥xij.
Solutionis Arfenical. gutt. v.
Tinct. Opii gutt. viij.
—— Cardam. C. ℥j. M.
ft. Hauftus 4ta vel 6ta quaque hora capiendus.

have lately fallen under my care, the desired effect was obtained by such a junction.

During the fits of an intermittent the patient's strength is to be supported by food of a light nutritive nature, such as preparations of barley, sago, panado, and the like; but when the fit is off, he may be allowed animal food, and a moderate use of wine. A change of air and situation has sometimes a happy effect in removing an intermittent. When none of the viscera are affected, cold bathing may be used with advantage.

As intermittents are very apt to return, the patient should carefully avoid all such causes as might produce a fresh attack. Should he be incommoded by a giddiness of the head, which is not uncommonly the case even after a slight attack of this fever, it may generally be relieved by volatiles* and the bark in wine.

OF THE REMITTENT FEVER.

By a remittent is to be understood where the fever abates, but does not go off entirely before a fresh attack ensues; or, in other words, where one paroxysm succeeds the other so quickly, that the patient is never without some degree of fever. It is to be observed, moreover, that the remissions happen at very irregular periods, and are of uncertain duration, being sometimes longer and sometimes shorter.

This fever is principally induced, as well as the intermittent, by marsh miasma, and is most apt to arise when calm, close, and sultry weather quickly succeeds heavy rains or great inundations. In warm climates, where great heat and moisture rapidly succeed each other, the remittent is a very prevalent type of fever. It is likewise often met with in low marshy situations abounding with wood and water, and is most apt to attack those of a relaxed habit, and those who breathe an impure air, and make use of a poor unwholesome diet.

Although this fever is produced originally by marsh miasma, still it probably may afterwards be spread by contagion, and not unfrequently becomes a prevailing epidemic, particularly in tropical climates.

Preceding an attack of a remittent fever, the patient is usually heavy and languid, and is troubled with anxiety, listlessness, sighing, yawning, and alternate fits of heat and cold. On its accession, he experiences severe pains in the head and back, intense heat over the whole body, with thirst, difficulty of breathing, and great dejection of spirits; the tongue is white; the eyes and skin appear yellow; there is pain and a sense of swelling about the region of the stomach; nausea, and a vomiting of bilious matter, ensue; and the pulse is frequent and small.

After a continuance of these symptoms for a time, the fever abates considerably, or goes off imperfectly by a gentle moisture diffused par-

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* R. Aq. Menth. Sativ. ℥iv. ℥iijfs.
Spirit. Ammon. C. gutt. xxx.—L.
Syrup. Cort. Aurant. ℥fs. M.
Capiat Cochl. larg. j. ter quaterve in die.

tially over the body; but, in a few hours, it returns with the same appearances as before. In this manner, with exacerbations and remissions, it proceeds at last to a crisis, or is changed into a fever of a different type. In warm climates, the remission often occurs so early as the second day, but in cold ones, it frequently does not take place until from the fourth to the sixth or eighth day.

The accession of fever, which has just been described, is however the mildest form under which it ever makes its appearance; for sometimes a severe delirium arises, and carries off the patient during the first paroxysm; or the remission, perhaps, is scarcely perceptible, and is immediately followed by another paroxysm, wherein there is a considerable aggravation of all the symptoms. The heat of the body is greatly increased, the face is highly flushed, the thirst is excessive, the tongue is covered with a dark brown fur, respiration is laborious, the pulse is quick, throbbing, and tremulous, and a delirium arises. At the distance of some time, perhaps, another short or imperfect remission again takes place; but the symptoms return once more with redoubled violence, and at length destroy the patient.

The symptoms which attend a remittent fever are apt to vary according to the situation and constitution of the patient, and likewise the season of the year, and therefore it is impossible to give a certain detail of them; for sometimes those pointing out a redundancy of the bile predominate; sometimes the nervous are most prevalent; and at other times the putrid.

A remittent fever is always attended with some hazard, particularly in warm climates, in which it usually goes through its course in the space of five or six days; but in cold ones, its crisis is not usually effected until the twelfth or fourteenth. The shorter and more obscure the remissions are, the greater will be the danger, and each succeeding paroxysm is attended with more risk than the former. On the contrary, the milder the attack, and the nearer the fever approaches to an intermittent, the fairer will be the prospect for a recovery.

The usual appearances on dissection are, congestions of blood in the liver, inflammations in the alimentary tube, and a morbid state of the brain.

From the determinations to particular organs, which take place in a remittent fever, and the marks of inflammation which are to be observed on dissection in the stomach and biliary organs, it would seem that bleeding is a necessary operation. In cold climates, and in a very early stage of the disease, it may be proper to have recourse to it, where the patient is young and of a full plethoric habit, the pulse full and hard, the heat intense, the breathing difficult, or the head much affected with stupor or delirium; but in warm climates, when few or none of these symptoms are present, it would certainly prove injurious, especially if the person has been an inhabitant therein for any length of time, and not lately arrived from Europe.

In every instance almost in which bleeding has been adopted, it has proved highly pernicious by inducing a state of extreme debility, under which the powers of life soon become exhausted.

To allay the violence of the fever, it will be more prudent carefully to remove and avoid every thing that might in the least contribute to increase it, such as too strong a light falling on the eyes, all noise and motion, and likewise any excess of heat. The patient is therefore to be kept perfectly quiet; the covering of his bed is to be light, and his chamber of a moderate temperature, by allowing a free admission of cool air into it. To assist these means, he should be presented from time to time with some cooling acidulated liquor, such as lemonade, tamarind beverage, or a solution of the crystals of tartar, or even cold water. Throughout the whole course of the disease, it will be advisable to change his body-linen, as well as that of the bed, frequently; to sprinkle his chamber often with vinegar; and to remove immediately whatever he voids by stool.

As nausea usually prevails at the commencement of the disease, it will, in all cases, be right to cleanse the stomach by giving a gentle emetic of ipecacuanha, or a solution of tartarised antimony, which perhaps may be preferable: the operation of this being over, the bowels may then be emptied by some gentle laxative, which will seldom fail in bringing off a considerable quantity of dark bilious matter. Strong purges, by determining inwardly and increasing the irritability of the stomach, would be prejudicial; and therefore, if it is necessary to obviate costiveness in the course of the disease, it will be most advisable to do it by the laxative medicines here prescribed,* assisted now and then with aperient clysters.

In this species of fever, as well as typhus icterodes, it is much the practice in warm climates to make use of calomel, and it may be regarded as a valuable remedy where we wish to carry off putrid feculent matter from the bowels, and there is at the same time any degree of nausea or vomiting present; as, from the smallness of its bulk, it may possibly be retained on the stomach, when every other purgative might be rejected.

After these evacuations, and where there is no delirium present, an opiate will be found of great service in quieting the commotions induced either by the spontaneous or artificial discharges, and in enabling the patient to retain on his stomach both nourishment and medicines.

In the remittent fevers of warm climates, as well as of temperate countries in the hotter seasons of the year, the best effects are to be derived from cold affusion, or throwing cold water over the patient; but it is to be understood that the height of the paroxysm is the proper time for the application of the remedy. The sensations of heat are then strong; the head-ach is violent, and delirium frequently runs high. By employing the remedy at an early period, we may be able either to

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* ℞. Kali Tartarisat. ℥ij.
Infus. Sennæ ℥jfs.
Tinct. Jalap. gutt. xx. M.
ft. Hauſtus.

Vel

℞. Pulv. Rhabarb. gr. x.—xv.
Calomel. gr. v.
Syrup. q. s. M.
Fiant Pilul. v. pro dos.

arrest the disease precipitately, or bring about an early solution of the paroxysm, but, at the least, we may for the most part so ameliorate its aspect, as that, from an obscure remittent, it will soon become an intermittent of a distinct and regular type. Where signs of congestion, or irregular action, present themselves in the abdominal or biliary system, and the disease is recent, it will be advisable, previous to having recourse to affusion, to premise proper evacuations.

In the progress of the disease, where much debility has arisen, aspersion, or sponging the body over with cold water and vinegar, together with an internal use of wine, may be substituted for affusion or immersion.

The general effects to be observed from affusion, where it can be practised with propriety, are a diminution of heat and anxiety, greater cheerfulness of countenance, improved recollection, tendency to sleep, the pulse becoming fuller and more uniform, and the skin moist, with now and then a distinct remission.

To alter the type of the fever, and bring the remission into perfect intermissions, if possible, by promoting a gentle diaphoresis, it will be proper to give antimonials in small and frequently repeated doses. They may be prescribed as mentioned under the head of Simple Continued Fever, or as below;* and to assist their effect, the patient should take frequent small draughts of some tepid diluting liquor.

Where frequent vomitings prevail, antimonials will not be proper. In their stead we may direct the saline medicine to be administered so as that the effervescence shall take place in the stomach, with the addition of about ten drops of tinct. opii to each dose. Moreover, we may direct flannel cloths wrung out in a warm decoction of chamomile-flowers and bruised poppy-heads, with an addition of alkohol, to be kept constantly applied over the region of this organ.

Should these means fail in procuring the desired effect, a large blister may be put immediately over the part, which will be found, in general, a very effectual remedy. The early application of a blister, even in cases where no great irritability of the stomach prevails, might in most instances be proper, as it will tend to prevent the determination to that organ. Blisters likewise prove highly serviceable in the latter stages of a remittent fever, when the spirits flag and the pulse is low and fluttering, with insensibility or a disposition to coma. In such cases they may be applied between the shoulders, or to the legs. Sinapisms of mustard may also be put to the soles of the feet.

When a severe vomiting has arisen, the patient ought to swallow as little drink as possible, and should only now and then just moisten his mouth and throat; for whatever reaches the stomach is sure to be rejected shortly with considerable violence; and each time it is thrown into these convulsive motions, the disease is strengthened and the person

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* ℞. Pulv. Jacob. Ver. gr. iv.
Camphor. gr. iij.
Conserv. Rosar. q. s. M.
ft. Bolus, 3tia vel 4ta hora sumendus.

exhausted. Under such circumstances, it will be better to support the strength by administering clysters composed of broths and other nutritious liquids, than to attempt it by giving any thing by the mouth.

When the stomach is not in an irritable state, and every thing is retained readily, the patient is to be supported by food of a light generous nature. During the remissions a little wine may be mixed with it.

As soon as the fever shews a disposition to yield, and a perfect remission takes place, we ought to give the bark in substance, and in such doses as the stomach will easily bear: and if about twenty drops of the acidum sulphuricum dilutum are added to each dose, the effect will be increased. Should the bark in powder prove either disagreeable to the patient, or excite nausea, then a decoction or infusion of it must be substituted. If any of its preparations should occasion a purging, about ten drops of the tinctura opii, or a drachm of the tinct. catechu, may be added to each dose.

In cold climates we may wait for a perfect and complete remission before we give the bark; but in warm climates we ought to administer it even on the most imperfect and short remission; and although it may not prove sufficiently efficacious to prevent a fresh attack at first, yet it will seldom fail to mitigate the subsequent returns of the fever, and will at last bring about a regular and perfect intermission.

By neglecting to give the cinchona in the West Indies and other warm climates upon the first remission, the fever is apt to assume a continued form. Where danger is to be apprehended with every return of the paroxysm, and where the interval is likely to be short, we should give at least half an ounce of bark at once immediately on the commencement of the intermission. During the rest of the intermission or remission we may administer it in doses of about two drachms repeated at such distances as that the patient shall take an ounce, or an ounce and a half, if possible, previous to the next accession. When the interval is pretty long, the remedy may be divided into smaller doses.

To guard against a relapse, the bark should be continued for some days after a cessation of the attacks, and not be too hastily left off, as is sometimes the case.

Dr. Fowler of York, found the most beneficial effects from the use of arsenic in the form of solution in this fever, as well as in intermittents. From his report, published in the ninth volume of the Medical Commentaries, it appears, that he experienced its virtues from repeated trials made of it on himself, having been so unfortunate as to have been visited by several attacks of a remittent, between the years 1786 and 1791. He took the solution, as directed to be prepared under the head of Intermittent Fever, in doses of from eight to ten drops twice a day, and always experienced the curative effects of the medicine, during each period of its administration, to be very pointed and successful.

Probably it might be best to administer this solution combined with the cinchona, either in substance, decoction, or infusion.

Every thing that may have a tendency to bring on a fresh attack of

fever is carefully to be avoided during the state of convalescence. A change of air and situation (particularly if it has been low and damp) may have a good effect in expediting the patient's recovery; and if the appetite does not return readily, he may take stomachic bitters with advantage. See Dyspepsia for these.

Gestation in the open air in wheel-carriages is a remedy which has been strongly recommended by Dr. Jackson,* towards the close of the bilious remittent fever of warm climates, as well as of all others which have arisen from infection; and he cites many instances which fell under his treatment and immediate observation, whilst he officiated as physician to the army, both on foreign stations and at home, in which it was employed not only with safety, but with the highest efficacy, particularly so in those where the diseased action had ceased, but where the healthy movement was slow. He observes, that although the good effects of gestation be in themselves conspicuous, they are at the same time much increased by ablutions; by an entire change of clothes; and by frictions, both before the journey is undertaken, and after it is finished.

In seasons and places where this fever is prevalent, it will be advisable, by way of preventive, to take a proper dose of the tinct. cort. Peruv. composita about twice a day, but more particularly on an empty stomach in the morning.

OF CONTINUED FEVERS.

Of the SIMPLE CONTINUED FEVER, or SYNOCHUS.

SYNOCHA and Typhus, blended together in a slight degree, seem to constitute this species of fever, as has before been observed; the former being apt to preponderate at its commencement, and the latter towards its termination. It is contagious, and is of more frequent occurrence in this country than any other kind of fever.

Every thing which has a tendency to enervate the body, may be looked upon as a remote cause of fever; and accordingly, we find it often arising from great bodily fatigue, too great an indulgence in sensual pleasures, violent exertions, intemperance in drinking, and errors in diet; and now and then likewise, from the suppression of some long-accustomed discharge. Certain passions of the mind (such as grief, fear, anxiety, and joy) have been enumerated among the causes of fever, and in a few instances it is probable they may have given rise to it: but the concurrence of some other power seems generally necessary to produce this effect. The most usual and universal cause of this fever is the application of cold to the body, giving a check to perspiration; and its morbid effects seem to depend partly upon certain circumstances of the cold itself, and partly upon certain circumstances of the person to whom it is applied.

The circumstances which seem to give the application of cold a due effect, are its degree of intensity; the length of time which it is

* See his Exposition on applying cold Water in Fever, p. 298.

applied; its being applied generally, or only in a current of air; its having a degree of moisture accompanying it, and its being a considerable or sudden change from heat to cold.

The circumstances of persons rendering them more liable to be affected by cold, seem to be debility, induced either by great fatigue or violent exertions; by long fasting; by the want of natural rest; by severe evacuations; by preceding disease; by errors in diet; by intemperance in drinking; by great sensuality; by too close an application to study, or giving way to grief, fear, or great anxiety; by depriving the body of a part of its accustomed clothing; by exposing any one particular part of it while the rest is kept of its usual warmth; or by exposing it generally or suddenly to cold when heated much beyond its usual temperature: these we may therefore look upon as so many causes giving an effect to cold, which it otherwise might not have produced.

Another frequent cause of fever seems to be, the breathing air contaminated by the vapour arising either directly or originally from the body of a person labouring under the disease. A peculiar matter is supposed to be generated in the body of a person affected with fever, and this floating in the atmosphere, and being applied to one in health, will no doubt often cause fever to take place in him, which has induced many to suppose, that this infectious matter is produced in all fevers whatever, and that they are all more or less contagious.

The effluvia arising from the human body, if long confined to one place without being diffused in the atmosphere, will, it is well known, acquire a singular virulence, and will, if applied to the bodies of men, become a cause of fever.

Exhalations arising from animal or vegetable substances in a state of putrefaction, have been looked upon as another general cause of fever; marshy or moist grounds, acted upon by heat for any length of time usually send forth exhalations which prove a never-failing source of fever.

Marsh miasma, as these exhalations are usually termed, have undoubtedly the peculiar effect of inducing fever on human bodies, exposed under certain conditions to their influence. From their denomination it is too commonly understood, that marshes are the only sources whence these exhalations arise; but they also proceed from moist earth, slime, mire or mud, in a great variety of situations and climates, of inhabited, as well as unfrequented and uncultivated tracts of country, in almost every quarter of the globe. They are more powerful, concentrated, and virulent in hot climates and in warm seasons, than in temperate ones. It further appears that the types, or periodical evolutions of the fever which they excite, are chiefly governed by the degrees of concentration which these exhalations possess; the type being more continued and less intermittent or remittent, in proportion to the power of the exhalation.

Numerous are the writers, who, for upwards of a century, have successively exerted their talents in pointing out what each conceived to be the proximate cause, or essential nature of fever; some supposing it

to consist in a noxious matter, introduced into, or generated in the body, the increased action of the heart and arteries being an effort of nature to expel this morbific matter; others offering it as their opinion, that it consisted in an increased secretion of bile; and others again, that it is to be attributed to a spasmodic constriction of the extreme vessels on the surface of the body, which, indeed, was the doctrine taught by the late Dr. Cullen. A modern writer,* however, tells us that the local and primary seat of idiopathic fever is in the brain, and that it is nothing more or less than a species of phrenitis, or topical inflammation of the brain.

Dr. Currie supposes debility of a peculiar kind to be the first operation of the remote cause producing fever; the necessary consequence or concomitant effect, is, he thinks, a spasm or contraction of the arteries, but more especially of the extreme vessels and capillaries of the surface; hence follows an accumulation of blood on the heart and lungs, the reaction of these organs, the separation of morbid heat, and morbid association. The ground of this theory is indeed nearly the same with that of Dr. Cullen, resting, however, more fully on morbid heat, and admitting into the chain of operation an appendage of morbid association.

To investigate these different hypotheses, would lead me into a train of theoretical and vague reasoning, inconsistent with the plan of this publication; I shall therefore proceed to point out the manner in which fevers usually come on, barely observing that the proximate cause of fever is by no means, as yet, satisfactorily ascertained.

An attack of this fever is generally marked by the patient's being seized with a considerable degree of languor or sense of debility, together with a sluggishness in motion, and frequent yawning and stretching; the face and extremities at the same time become pale, and the skin over the whole surface of the body appears constricted: he then perceives a sensation of cold in his back, passing from thence over his whole frame; and this sense of cold continuing to increase, tremors in the limbs and rigors of the body succeed. With these, there is a loss of appetite, want of taste in the mouth, slight pains in the head, back, and loins, and a small and frequent respiration.

The sense of cold and its effects, after a little time, become less violent, and are alternated with flushings, and at last, going off altogether, they are succeeded by great heat diffused generally over the whole body; the face looks flushed; the skin is dry, as likewise the tongue; universal restlessness prevails, with a violent pain in the head, oppression at the chest, sickness at the stomach, and an inclination to vomit. There is likewise great thirst and costiveness, and the pulse is full and frequent, beating perhaps 90, 100, or 120 strokes in a minute. When the symptoms run very high, and there is a considerable determination of blood to the head, delirium will arise. In this fever, as well as most others, there is generally an increase of the symptoms towards evening.

* See Enquiry into the Seat and Nature of Fever, by H. Clutterbuck, M. D.

If the disease is likely to prove fatal, either by its continuing a long time, or by the severity of its symptoms, then a starting of the tendons, picking at the bed-clothes, involuntary discharges by urine and stool, coldness of the extremities, and hiccups, will be observed: where no such appearances take place, the disease will go through its course, and at length cease.

As a fever once produced will go on, although its cause be entirely removed, and as the continued or fresh application of a cause of fever neither will increase that which is already produced, nor occasion a new one,* there can be no certainty as to the duration of fever; and it is only by attending to certain appearances or changes, which usually take place on the approach of a crisis, that we can form any opinion or decision on this head.

The symptoms pointing out the approach of a crisis, are, the pulse becoming soft, moderate, and near its natural speed; the tongue losing its fur and becoming clean, with an abatement of thirst; the skin being covered with a gentle moisture, and feeling soft to the touch; the secretory organs performing their several offices, and the urine depositing flaky crystals of a dirty red colour, and becoming turbid on being allowed to stand any time.

Many physicians have been of opinion, that there is something in the nature of all acute diseases, except those of a putrid kind, which usually determines them to be of a certain duration; and therefore that these terminations, when salutary, happen at certain periods of the disease rather than at others, unless disturbed in their progress by an improper mode of treatment, or the arising of some accidental circumstance.

These periods are known by the appellation of critical days, and from the time of Hippocrates down to the present, have been pretty generally admitted. The truth of them, I think, can hardly be disputed, however they may be interrupted by various causes. A great number of phenomena shew us, that, both in the sound state and the diseased, nature has a tendency to observe certain periods: for instance, the vicissitudes of sleeping and watching, occurring with such regularity to every one; the accurate periods that the menstrual flux observes, and the exact time of pregnancy in all viviparous animals, and many other such instances that might be adduced, all prove this law.

With respect to diseases, every one must have observed the definite periods which take place in regular intermittents, as well those universal as topical, in the course of true inflammation, which at the fourth, or at the farthest seventh day, is resolved, or after this period changes into either abscess, gangrene, or scirrhus: in exanthematous eruptions, which, if they are favourable and regular, shew themselves on a certain and definite day; for example, the small-pox about the fourth day. All these appear to be founded on immutable laws, according to which the motions of the body in health and in disease are governed.

The days on which it is supposed the termination of continued fevers

* Ideas supported by Dr. George Fordyce.---See his Treatise on simple Fever.

principally happens, are the third, fifth, seventh, ninth, eleventh, fourteenth, seventeenth, and twentieth.

A simple continued fever terminates always by a regular crisis in the manner before mentioned; or from the febrile matter falling on some particular parts, it excites inflammation, abscess, eruption, or destroys the patient.

Great anxiety, loss of strength, intense heat, stupor, delirium, irregularity in the pulse, twitchings in the fingers and hands, picking at the bed-clothes, startings of the tendons, hiccups, involuntary evacuations by urine and stool, and such-like symptoms, point out the certain approach of death. On the contrary, when the senses remain clear and distinct, the febrile heat abates, the skin is soft and moist, the pulse becomes moderate and is regular, and the urine deposits flaky crystals, we may then expect a speedy and happy termination to the disease.

It sometimes happens that the fever does not affect every part of the system equally; the symptoms being less severe in one part of it than in another. This, which the young and inexperienced practitioner, and the by-standers in a much greater degree, are apt to think is fortunate for the patient, is, in fact, the very reverse, as has been very judiciously observed by Dr. Fordyce;* there being nothing more dangerous in fever, than its not affecting every part of the system in an equal degree.

The usual appearances which are to be observed on dissection of those who die of this fever, are an effusion within the cranium, and topical affections, perhaps, of some of the viscera.

In fever, all motion of the body should be avoided, especially that which requires the exercise of the muscles; the patient ought therefore to be confined to his bed. The exercise of the mind proving a stimulus to the body, all impressions which lead to thought, especially those which may excite emotion or passion, are to be carefully shunned. A person labouring under a fever, ought therefore to be kept as composed and quiet as possible, and his chamber should not be close and warm, as is too usually the case; but, on the contrary, perfectly cool and sufficiently ventilated, taking care, however, that the air does not come in a direct stream or current upon him. He is likewise to be lightly covered with bed-clothes.

The strict pursuance of an antiphlogistic regimen will be highly necessary to be observed in this fever, as well as in some others of the continued kind. That sort of aliment which gives the least stimulus, will be the most proper: the food should be light, nourishing, and easy of digestion, consisting of preparations of barley, oatmeal, sago, vermicelli, tapioca, and the meal of Indian arrow-root, varying them now and then for panado, roasted apples, &c. Animal broths produce an increase of heat in the body, and are therefore improper, unless the patient is in a state of convalescence. For drink, he may take barley-water, linseed-tea, toast and water, milk-whey, thin gruel,

* See his fifth Dissertation on Fever.

and lemonade, which may be varied now and then for an infusion of balm, and such other herbs, carefully shunning the use of any kind of spirituous or fermented liquor.

In fever, it is no uncommon occurrence for peculiar longings to arise, and when they do, they should always be gratified in moderation, although they may seem not altogether proper.

The stomach and rest of the alimentary canal are manifestly affected in many cases of fever in a higher degree than other parts of the body, and therefore emetics and purgatives are usually the first means which present themselves to the notice of the physician. In fever it will therefore be necessary to pay an early attention to the state of the stomach, and if there are any crudities or corrupted humours, producing nausea or vomiting, to dislodge them by administering a gentle emetic.* To assist its operation, the patient should drink freely of lukewarm water, or an infusion of chamomile-flowers.

To remove the feculent contents of the bowels some gentle laxative† may be taken; and throughout the remainder of the disease, the body should be kept open, if necessary, by a repetition of some such medicine, administered as the occasion may require, or by means of aperient clysters.‡ Where the disorder seems to have arisen from, or to be kept up by a redundant secretion of bile, mild purgatives will still be more highly necessary, and perhaps calomel joined with a few grains of jalap or cathartic extract may best answer our purpose. Purgative medicines are sometimes combined with antimonials.§

In the simple continued fever it will seldom be necessary to have recourse to the lancet, particularly in warm climates; but should the disease have arisen in a young person of a plethoric habit, and the attack of fever have been severe, with considerable flushing of the face, redness of the eyes, delirium, and a full, hard, and obstructed pulse, we may then advise the taking away eight or ten ounces of blood. This quantity should be drawn off at once from a large orifice, and not by repeated bleedings; as by the former mode there will be greater temporary, but less permanent weakness induced by the evacuation. Under no other circumstances will it be advisable to resort to this operation, as we might thereby occasion a slower recovery by inducing a state of extreme debility.

By bleeding unnecessarily at the commencement of this fever, such a degree of weakness may be induced as, added to the depression of

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* ℞. Pulv. Ipecac. gr. xv.
Antimon. Tartarisat. gr. j.
Aq. Menth. Sativ. ℥jss. M.
ft. Haustus.

† ℞. Kal. Tartarisat. ℥ss.
Mannæ Optim. ℥ss.
Aquæ Fervent. ℥iij.
—— Cinnam. ℥ss. ft.
Solutio cujus sumat dimidium, et repetatur dos. post horas duas nisi alvus prius respondeat.

‡ ℞. Natri Vitriolat. ℥ss.
Decoct. pro Enemate ℥xij.
Olei Olivæ ℥ss. M.
ft. Enema.

§ ℞. Calomelanos gr. v.
Pulv. Antimonial. gr. j.—ij. M.
fr. Pulvis.

strength, which arises in its progress, might produce symptoms of putrefaction in the second or third week of the disease, so as to prove fatal. By neglecting to bleed, however, when the pulse is full, hard, and quick, the respiration hurried, breath hot, skin dry, and the head highly painful, we shall commit a dangerous error, and endanger the life of the patient.

Bleeding in fevers is strongly recommended by a late writer,* and he seems to value it far more highly than any of his cotemporaries. In malignant fevers, it has generally been considered as inadmissible, but even in these, as well as the fevers of tropical climates, he deems it, on many occasions, to be an essential part of the preparation for his curative means. It is necessary, however, to observe, that he by no means considers bleeding as a debilitating process. Its effects, he says, are stimulative, relatively according to the circumstances of the subject, and they are extensive, for they are felt in all parts of the circulating system, and consequently through the whole extent of the animated machine. The abstraction of blood, by its express effect, diminishes the quantity of a body to be moved, and therefore increases the power of the mover: it thus facilitates motion; but this, we are told, is not all. The diminution of the quantity of blood, and change of movement in consequence of such diminution, is in some manner productive of a change of condition at the sources of life: motion is effected, changed, even suspended; diseased motions are arrested; an opportunity is thereby furnished for the more effective action of those powers, which are provided and expressly calculated for the stimulation of the due action of health. Bleeding, as it is the most manageable power, so it possesses the most absolute influence over animal movement, either as directly effective of a final purpose, or as preparatory to the action of other means necessary to insure the final purpose.

Such is Dr. Jackson's mode of reasoning, and although plausible, still I conceive there will be found few among our modern physicians who will be ready to adopt his practice, but particularly those whose patients compose the higher classes in life, and whose enervated frames are ill calculated to bear copious depletion by venesection. The stout robust, and hardy British soldier may undergo such a discipline with less injurious effects, and in cases of severe attacks may undoubtedly require a free use of the lancet; but surely the remedy in question cannot be so universally necessary as Dr. Jackson supposes. He moreover tells us† that a certain condition of susceptibility is necessary to insure the action of whatever means we may employ in fever, and that where this does not exist naturally, it must be excited artificially, which is to be accomplished in some degree by applying fomentations to the legs and feet: or by immersing the lower parts, and even the whole of the body, in a warm bath, but principally by subtracting blood from a vein, the quantity of which is to be measured according to the circumstances of the case, and the effect which arises in the course of the

* See Dr. Jackson's Appendix to his Remarks on the Constitution of the Medical Department of the British Army.

† See his Exposition on the Practice of applying Cold in Fevers.

progress, and not by any preconceived opinion of what may be sufficient; for few, he observes, can be supposed to possess such a knowledge of the nature of things, as to be capable of measuring it with exactness in the prescription-book. The effect to be looked for, and which is to decide the measure of the quantity, he notices, implies a remission of pains of all denominations, relaxation of the skin, freedom in all the secretory functions, and change in the condition of the pulse, which, instead of being hard, tense, and tumultuously agitated, becomes free, open, and regular. Dr. Jackson is at the same time ready to admit, however, that many instances occur where the action of the fever is not principally manifested in the circulating system, either by increase or defect of action; consequently, where bleeding is not the remedy of chief dependence.

If great heat, with much thirst, prevails, refrigerant medicines may be taken with advantage, and the most useful of this class is nitre, which may either be joined with others,* or be added to whatever the patient uses for common drink.†

Acids of all kinds, when sufficiently diluted, are refrigerant remedies well adapted to continued fevers. Those most in use are the sulphuric, muriatic, and vegetable, but more particularly the latter, such as the acid of tamarinds, oranges, lemons, mulberries, &c. As a refrigerant, cold water may likewise be drunk.

For the purpose of arresting the febrile course, and moderating or abstracting the morbid excess of heat, and restoring a healthy action, cold bathing has of late years been much employed in fevers. The practice of bathing in fevers appears indeed to be of great antiquity, for its use and management were well known to Galen, and are well defined by him. It farther appears, by the relation of travellers, to have been long used by several of the Eastern nations. We have likewise indisputable proof that cold affusion had long ago been employed by Dr. Wright of Jamaica, and some other physicians in the West Indies, particularly by Dr. Jackson. The notice which this remedy has attracted in England, has certainly, however, been owing to the popular manner in which the subject has been treated by the late Dr. Currie of Liverpool. For the safest time, and most advantageous mode of employing cold affusion in fevers, I beg leave to refer the reader to the admonitions given under the heads of Typhus Mitior and Typhus Gravior. Under the present, I will only observe, that affusion with cold water, either by means of a large watering-pot, so as to allow the streams to pour on the head and shoulders with some force, or by dashing it out of a pail, may be boldly and fearlessly resorted to at the commencement of the greater number of fevers of every climate, where no catarrhal symptoms or inflammatory affection of the lungs are present; but in the advanced

* ℞. Kali Præparat. ℥j. vel q. s.
Succi Limon. ℥ss.
Nitri Purif. gr. x.
Aq. Fontan. ℥jss.
Syrup. Violæ ℥j. M.
ft. Haustus 3tia quaq; hora sumendus.

† ℞. Decoct. Hordei ℔ij.
Nitri Purif. ℥ij.
ft. Potus.

stages, or latter periods of most, and where there is much debility, this remedy should be adopted with due caution, and a careful consideration of the attendant circumstances.

With a view to determine the circulation to the surface of the body, it will be right to resort to an early use of such medicines as possess this peculiar power. To excite a perspiration, it will in many cases be sufficient only to make the patient lie abed, and drink plentifully of diluting liquors; but should these simple means not prove efficacious, it then will be necessary to resort to more powerful agents.

Neutral salts,* when taken into the stomach, soon produce a sense of heat on the surface of the body; and if it be covered close, and kept moderately warm, a gentle sweat is often readily brought on. These, therefore, being possessed of the power of determining to the surface, are highly useful in fever, and may be prescribed as in the undermentioned forms.

Emetic medicines, and particularly antimonials, given in small nauseating doses, have likewise a similar power of determining the circulation to the surface of the body, and of producing symptoms similar to those which take place in the crisis of fever: these are therefore advisable. They may either be combined with those of the before-mentioned class, or be given by themselves.† From the uncertainty with which Dr. James's powder and the pulvis antimonialis act, the tartarised antimony may be considered as preferable in many cases.

To increase the diaphoretic effect of these medicines, the patient should take frequent small draughts of some tepid liquor.

Warm bathing, or fomenting the lower extremities, are remedies sometimes employed in fever to produce moderate sweating. Where these relieve delirium, induce sleep, and are easily borne by the patient, we may be assured of their propriety. Sweating, however, when excited in fevers, by stimulant, heating, and inflammatory medicines, is

* ℞. Ammon. Præparat. gr. x.
Succi Limon. ℥fs.
Aq. Menth. Sativ. ℥j.
Tinct. Lav. Comp. gutt. x.
Syr. Althææ ℥ij. M.
ft. Hauſtus.
Vel
℞. Succi Limon. ℥jfs.
Kali Præparat. ℥j. vel q. s.
Aq. Menth. Sativ. ℥j.
—— Fontan. ℥iij.
Antim. Tartariſat. gr. jfs. ad ij.
Syrup. Caryoph. Rub. ℥ij. M.
ft. Miſtura cujus capiat Cochl. ij. magna ſecund. quaque hora.
Vel
℞. Aq. Ammon. Acet.
—— Cinnam. āā ℥fs.
—— Fontan. ℥j.
Vini Antimon. gutt. xv.
Spirit. Ætheris Nitros. ℥fs. M.
ft. Hauſtus ꝛtia quaq. hora ſumendus.

† ℞. Pulv. Antim. gr. j. ad iij.
Conſerv. Roſæ gr. x. M.
ft. Bolus 4ta quaque hora ſumendus.
Vel
℞. Pulv. Jacob. Ver. gr. v. pro dos.
Vel
℞. Pulv. Ipecacuanh. gr. iij.
Conſerv. Cort. Aurant. gr. x. M.
ft. Bolus.
Vel
℞. Antim. Tartariſat. gr. jfs.
Aq. Fontan. ℥vj.
Syrup. Caryoph. Rubr. ℥ij. M.
ft. Miſtura cujus ſumat Cochl. ij. magna 3da *vel* ꝛtia hora.

almost sure to prove hurtful. It likewise proves injurious, when excited by much external heat; as also where, instead of relieving, it rather increases the frequency and hardness of the pulse, the anxiety and difficulty of breathing, the head-ach and delirium. When sweating is partial, and confined to the superior parts of the body, it will be more likely to prove hurtful than salutary.

If a cough accompanies the fever, and a rawness and soreness in the fauces, together with a tightness at the chest, are present, then, besides pursuing the antiphlogistic plan before advised, we may give demulcents* in frequent repeated doses.

Should a vomiting arise in the course of this fever, and the irritation prove considerable, a saline draught may be taken in the act of effervescence, or it may be administered, so as that this shall take place in the stomach. The manner of doing it, is by giving the patient about half an ounce of lemon-juice mixt up with a little mint-water and syrup, and immediately afterwards, about a scruple of the kali præparatum dissolved in an ounce of common water. If the irritation at the stomach is not abated by this means, we may add a few drops of tinctura opii with a little aqua cinnamomi.

In this fever, partial evacuations, such as purging and sweating, which have no tendency to prove critical, often arise. When these happen, we should, by all means, put a stop to them. The former may be checked by astringents as below,† or as advised under the head of Diarrhœa; and the latter, by keeping the patient cool, by washing his body frequently with a sponge dipped in cold water, and giving him refrigerants.

We may distinguish critical evacuations from those which are not so, by attending to the appearances which take place in other parts of the system. For instance, if a purging should arise, and the tongue continue foul, and the skin dry, without any abatement of heat and thirst, then we may regard it as by no means critical; but if on its taking place, the tongue becomes clean and moist, the pulse moderates, the febrile symptoms abate, and the skin has a gentle breathing sweat universally diffused over it, then a crisis may be expected.

In the progress of this fever, it sometimes happens that particular parts of the body are much affected, and that there prevails either great

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* ℞. Sevi Ceti ℥ij.
Vitel. Ovi q. s. ad solut.
Aquæ Pulegii ℥iv.
Oxymel. Scil. ℥iij.
Syrup. Tolutan. ℥ij. M.
ft. Mistura.
Vel
℞. Mucil. G. Arabic.
Aq. Fontan. ää ℥iij.
Nitr. Purific. ℈j.
Vin. Antimon. gutt. LX.
Syrup. Limon. ℥fs. M.
ft. Mistura Cochl. ij. pro dee tussie urgenti sumenda.

† ℞. Confect. Aromat. ℥ij.
Aq. Cinnam. ℥j.
—— Fontan. ℥iij.
Tinct. Catechu ℥ij. M.
ft. Mistura cujus sumat Cochl. ij. magna post singulas sedes liquidas.

oppression of breathing, or that violent pains in the head, stupor, or delirium ensue. In all such cases, the application of a blister near the part affected will be proper, and relief will often be quickly produced by it. Where there is any unusual coldness of the extremities, with a sinking pulse, blisters to the inside of the legs will likewise prove highly serviceable. Their efficacy in such cases may be increased by the application of stimulating cataplasms* to the soles of the feet and palms of the hands. Camphor, ammonia, musk, and æther, are remedies which may be used at the same time, either separately or combined together: and the patient should be allowed a liberal use of wine, both in a diluted and undiluted state.

When we administer camphor in this or any other disease in a liquid form, in order to render it properly diffusive in water, and obtain its full effect, we should (instead of trusting to the mistura camphorata of the London dispensatory, which contains but a small proportion of the resin) dissolve it in a little alcohol, or expressed oil, and then triturate it well with mucilage of gum arabic, previous to adding the water.

Severe pains in the head accompanied with a throbbing of the arteries, or any degree of delirium, may possibly be relieved by the application of a few leeches to each temple; after which, linen rags moistened in cold water, or even æther, may be laid on.

In synochus, there is often a great interruption to sleep; and the more violent the fever, the greater in general is the interruption. It is unfortunate, however, that it cannot be procured with safety to the patient, as opium proves generally prejudicial in all fevers, except those of the typhus kind. To produce rest, therefore, in that which I am treating of, we must be contented in directing him to be kept as still and quiet as possible. If necessity obliges us to a use of sedatives, the spiritus ætheris nitrosi, or Hoffman's liquor, will be the least exceptionable.

Where this fever is kept up merely by weakness and irritability, opium given in small doses may be proper. If it is found to procure refreshing sleep, the dose may be repeated the ensuing night; but if the rest has been much disturbed, its use ought to be discontinued.

By introducing opium into the system by means of friction, as advised under the head of Cholera Morbus, it possibly might not be attended with any injurious effect. In this fever, as well as in all others where we wish to procure sleep, and cannot have recourse to opium, on account of delirium being present, we may recommend a pillow filled with hops to be laid under the patient's head in the same manner as in mania, in which disease this remedy is known to have been used with singular advantage; or we may employ some of its preparations, such as its extract or tincture. Hyoscyamus is said to have been given under similar circumstances with much benefit.

This fever is, in some instances, continued and kept up solely by de-

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* ℞. Seminum Sinapeos Cras.
Medullæ Panis ää ℔ß.
Aceti quantum satis sit. M. et fiat Cataplasma.

bility, as has just been mentioned. In such cases, if the symptoms are mild, we may venture to prescribe a use of the Peruvian bark; and as it will be more likely to sit easy on the stomach, in the form of decoction* or infusion,† these preparations of it will here be preferable to giving it in substance. If, on a trial, the patient sleeps well, breathes easily, and does not find any increased heat, we may then venture to go on with it; but if, on the contrary, it produces restlessness, difficulty of breathing, &c. its use should be omitted.

In the continued fevers of warm climates, we should by no means wait for a complete crisis, in order to administer the bark. In these, it will be prudent to embrace even the least remission, let it be ever so imperfect, or of short duration, as likewise to give it in as large doses as the stomach will bear, and to repeat these frequently. The same attention must, however, be paid to the effects it produces, as have been mentioned, or may hereafter be noticed.

In cold climates, it is usual to wait for a regular intermission before the bark is given. As a tonic, this medicine has acquired the greatest celebrity in all febrile cases, and is therefore usually preferred to all others; its effects are evidently more obvious when given in substance, than in any other form. About a drachm of the powder is a common dose, and this may be repeated every two or three hours, according to the exigency of the case. Ten or twelve drops of the acidum sulphuricum dilutum may be added to each dose. The bark is apt, at first taking it, to affect the bowels, and pass off by stool, with many people. When this happens, five or six drops of the tinctura opii, or about half a drachm of the tinctura catechu, may be added to each dose.

With some persons, the bark will not sit easy on the stomach, almost in any shape. In such cases, we may substitute the use of quassia,‡ or any of the other astringent bitters noticed under the head of Intermittents.

On a recovery from fever, the patient should cautiously avoid any fatigue, exposure to cold, or improper food. As restoratives, a generous diet with a moderate use of wine will be serviceable; and if the season of the year will admit of cold bathing, it will likewise be advisable. A change of air, with moderate daily exercise, either in a carriage or on horseback, will prove powerful auxiliaries in enabling the convalescent to regain his strength. Where the appetite is defective, we may prescribe stomachic bitters. See Dyspepsia.

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* ℞. Pulv. Cinchonæ ℥ij ſs.
Aq. Fontan. ℔j ſs.
Coque ad ℔j. et Col. dein adde
Tinct. Columbæ ʒj. M.
ft. Decoctum.

† ℞. Cort. Peruv. in pulv. trit. ℥ſs.
Aq. Bullient. ℥vj.
Colat. adde
Tinct. Cort. Aurant. ʒij. M.
ft. Infuſio.

‡ ℞. Quaſſiæ ʒij. Coque in
Aq. Fontan. ℥xij. ad ℥vj. Colat. adde
Tinct. Columb.
——Card. Com. ää ℥ſs. M.
ft. Miſtura cujus capiat Cochl. ij. tertiis horis
cum guttis xv. Acidi Sulphur. Diluti.

Of the INFLAMMATORY FEVER, or SYNOCHA.

THIS fever is so named from its being attended with symptoms denoting general inflammation in the system, by which we shall always be able readily to distinguish it from either the nervous or putrid. It makes its attack at all seasons of the year, but is most prevalent in the spring; and it seizes persons of all ages and habits, but more particularly those in the vigour of life, with strong elastic fibres, and of a plethoric constitution. It is a species of fever almost peculiar to cold and temperate climates, being rarely, if ever, met with in very warm ones, except among Europeans lately arrived; and even then, the inflammatory stage is of short duration, as it soon assumes the typhoid type.

The exciting causes are, sudden transitions from heat to cold, swallowing cold liquors when the body is much heated by exercise, too free a use of vinous and spirituous liquors, great intemperance, violent passions of the mind, exposure to the rays of the sun, topical inflammation, the suppression of habitual evacuations, and the sudden repulsion of eruptions. It may be doubted if this fever ever originates from personal infection; but it is possible for it to appear pretty generally among such as are of a robust habit, from a peculiar state of the atmosphere.

It comes on with a sense of lassitude and inactivity, succeeded by vertigo, rigors, and pains over the whole body, but more particularly in the head and back; which symptoms are shortly followed by redness of the face, throbbing of the temples, great restlessness, intense heat, and unquenchable thirst, oppression of breathing, and nausea. The skin is dry and parched; the eyes appear inflamed, and are incapable of bearing the light; the tongue is of a scarlet colour at the sides, and furred, with white in the centre; the urine is red and scanty, the body is costive, and there is a quickness, with a fulness and hardness in the pulse, not much affected by any pressure made on the artery. Its pulsations are from 90 to 130 in a minute, and when blood is drawn, it exhibits a yellowish or buffy crust on its surface. If the febrile symptoms run very high, and proper means are not used at an early period, stupor and delirium come on; the imagination becomes much disturbed and hurried, and the patient raves violently.

The disease usually goes through its course in about fourteen days, and terminates critically, either by a diaphoresis, diarrhœa, hemorrhage from the nose, or the deposit of a copious sediment in the urine; which crisis is usually preceded by some variation in the pulse. In some instances, it, however, terminates fatally.

Our judgment as to the termination of the disease must be formed from the violence of the attack, and the nature of the symptoms. If the fever runs high, or continues many days, with stupor and delirium, the event may be doubtful; but if to these are added, picking at the bed-clothes, startings of the tendons, involuntary discharges by stool and urine, and hiccups, it will then certainly be fatal. On the contrary,

if the febrile heat abates, the other symptoms moderate, and there is a tendency to a crisis, which is marked by a universal and natural perspiration on the body; by the urine depositing a lateritious sediment, and by the pulse becoming more slow or soft; or by a hemorrhage from the nose, diarrhœa supervening; or the formation of abscesses; we may then expect a recovery. In a few cases, this fever has been succeeded by mania.

On opening those who die of an inflammatory fever, an effusion is often perceived within the cranium; and now and then, topical affections of some of the viscera are to be observed.

From the symptoms which attend this disease, it is evident our endeavours should be early exerted to avoid the mischief that may ensue from general inflammation; and as evacuation by bleeding is the chief mean we can confide in, it should be resorted to on the first of its attack; and one large bleeding at this period will have a much better effect than repeated small ones afterwards. If the symptoms run high, therefore, and the person is young and plethoric, twelve or fourteen ounces may be drawn off at once, from a large orifice. In repeating the operation, we are to be governed by the effect it produces on the pulse, and by the appearance the blood puts on after standing some time. If the former continues full, strong, and tense, and the latter exhibits a buffy sizy coat on its surface, the bleeding should be repeated by all means, but in smaller quantity than before.

Where the patient is too weak to bear a considerable loss of blood, from the disease having been of some duration when advice is applied for, it has been recommended to place him in an erect posture while the blood is drawn off, by which means a tendency to syncope will be induced by the loss of a small quantity, and a temporary, if not a permanent relief, be obtained.

When the fever has been of several days standing, and the head is much affected either with severe pain or delirium, topical bleeding, by the application of three or four leeches to each temple, may be preferable to using the lancet a second time, or perhaps even once.

Applying linen cloths wetted in cold water or æther to the forehead and temples, may be attended with some advantage in such cases.

With the view of diminishing inflammation and general excitement, digitalis has been proposed as a remedy in this disease, after having employed proper venesection, and probably may prove serviceable.

If any nausea prevails at the commencement of the disease, the stomach may be relieved by making the patient drink one or two cupfulls of chamomile tea; but should these simple means not be attended with the desired effect, he may then take a table-spoonful of an emetic solution,* every quarter of an hour, until sufficiently eased.

To obviate costiveness, one or two motions should be procured daily.

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*℞. Antimon. Tartarisat. gr. ij.
Aq. Fontanæ ℥iij.
Syr. Caryophil. R. ʒij. M.

by means either of some aperient medicine,* or by laxative clysters.† In synocha, cathartics will prove singularly useful. If the stomach is in an irritable state, we can substitute a few grains of calomel made up into pills, with a small quantity of cathartic extract, instead of the other laxative medicines.

To abate thirst, and determine to the surface of the body, the patient should be directed to drink frequently of diluting tepid liquors, acidulated with lemon-juice or crystals of tartar. He may likewise take small and frequently repeated doses of nitre ;‡ or, as a refrigerant, he may be allowed to drink freely of cold water. For the purpose of moderating or extracting the morbid excess of heat, various parts of the body should be sponged frequently with cold water. Sudorifics do not appear to be proper in this fever, as they might bring on profuse sweating; and it is not possible to keep the body warm without producing a considerable increase of heat. The neutral salts will be far preferable, and may be given in any of the forms advised under the head of Simple Fever, every two or three hours.

Should the breathing be oppressed, or should stupor or delirium arise, it will then be right to apply a blister in the neighbourhood of the part so affected. If the pulse sinks, and the extremities become cold, the application of sinapisms to the soles of the feet will be proper. Camphor, æther, ammonia, and cordials, will be proper remedies on such occasions.

In this fever, as in most others, sleep is much interrupted, and from a want of this, delirium often arises ; opium here would be an uncertain medicine, for, should it fail to procure rest, the delirium would be greatly increased by it. It should therefore be given only in cases of imminent danger, and even then, only in small doses frequently repeated, paying a strict attention to the effect it produces. In other instances, we should be contented with giving directions for the patient to be kept as quiet as possible.

Probably, we might employ some of the preparations of the humulus lupulus (hop,) or hyoscyamus, in this fever with benefit in lieu of opium. In cases of severe delirium threatening phrenitis, might not a use of the circular swing, noticed under the head of Mania, produce a good effect?

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* R. Pulp. Tamarind. ℥ss.
Cryst. Tartar. ℥ij.
Aq. Bullientis ℥v.
Colat. adde
Aq. Cinnam. ℥j.
Antimon. Tartarisat. gr. j. M.
Sumat Cochl. iv. et repetatur dos. post horas duas nisi alvus prius respondeat.

Vel

R. Infus. Sennæ ℥jss.
Magnes. Vitriolat. ℥vj.
Mannæ Optim. ℥ij. M.
ft. Haustus aperiens.

† R. Fol. Sennæ ℥iij.
Aq. Fontanæ ℥xvj.
Coque leniter ad ℥xij. et
Colat. adde
Magnes. Vitriolat. ℥j.
Ol. Olivæ ℥j. M.
ft. Enema.

‡ R. Nitri Purif. ℥ij.
Crystal. Tartar. ℥iij.
Antimon. Tartarisat. gr. jss. M.
ft. Pulvis dividend. in Chart No. vj. Sumat j. tertia hora.

Throughout the whole course of the disease, the patient is to abstain from solid food and animal broths, supporting nature with gruel, and preparations of barley, sago, tapioca, &c.

His chamber is by no means to be kept warm, either by fires or by being closely shut up, as is too generally the case: on the contrary, it should be of a proper temperature, by allowing the admission of cool air into it from time to time. His bed ought to be lightly covered with clothes.

On his recovery, a strict attention should be paid to regimen, scrupulously avoiding to overload the stomach, and partaking only of such things as are light, nutritive, and easy of digestion: all other causes likely to induce a relapse, are also to be carefully shunned.

Fresh air, gentle exercise on horseback or in a carriage, agreeable company, and a moderate use of wine, will greatly contribute to the recovery of convalescents. Should the appetite not readily return, or the digestion prove weak, stomachic bitters,* conjoined with the bark, may be advised. See Dyspepsia.

Of the NERVOUS FEVER or TYPHUS MITIOR.

THIS fever is so named from the effects it produces on the nervous system, typhus being derived from τυφος, stupor. It does not affect the habit so universally as the one last described; neither do the exacerbations produce a hot fit, in order to bring about a crisis. It may be distinguished from typhus gravior at its commencement, by the attack being more gradual, and the symptoms much milder: in the progress of the disease, by the absence of those symptoms of putrescence enumerated in typhus gravior; and by its being accompanied with less heat and thirst, less frequency of the pulse, and no bilious vomitings.

It principally attacks those of weak lax fibres; those who lead a sedentary life, and neglect proper exercise; those who study much; and those who indulge freely in enervating liquors. It likewise is apt to attack those who are weakened from not using a quantity of nutritive food, proportionable to the exercise and fatigue they daily undergo: hence it is very prevalent among the poor. Owing to the relaxed habits of those who reside in warm climates, this type of fever frequently occurs, and all other continued fevers are apt to degenerate into this, or typhus gravior.

It is often generated in jails, hospitals, transport and prison ships, ill-constructed and crowded barracks, work-houses, and the ill-ventilated apartments of the poor. It is also to be met with very frequently in the damp and dirty cellars of the poorer class of manufacturers in large towns.

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* ℞. Infus. Gentian. C. ℥v.
Tinct. Cort. Peruv. C. ℥j.
—— Columbæ ℥iij. M.
Capiat Cochl. iij. ter in die. Adde pro re nata
Acid. Sulph. Dilut gutt. xv. ad xxx.

Typhus mitior may be induced by whatever impoverishes the blood, debilitates the general system, or depresses the mind: hence severe evacuations, great fatigue, a low diet, continued want of sleep, excessive venery, grief, fear, anxiety, intense study, a moist atmosphere, and confined and unwholesome air, may give rise to it. The most general cause, however, of this fever, is contagion.

From Dr. Haygarth's experiments* it appears that not one in twenty-three, or even one in thirty-three, escapes infection, when exposed for a sufficient length of time, and that as many persons are liable to receive typhus as the variolous contagion. A short exposure to pestilential atmosphere may, in some instances, produce a fever; but still there is reason to presume that the poisonous miasms do not generate a fever, till they have been respired without interruption for some days; and hence it is probable, that in most cases an accumulated quantity of the poison may be required to give rise to it. It appears, from the example of medical practitioners, that air strongly impregnated with infectious miasms may be breathed for a short time, and air weakly impregnated for a long time, without injury. A certain dose of infection, as also a certain time of exposure, seem to be necessary, in order to the effect being produced. Persons confined in the midst of contagion are enabled, however, to bear up against a much larger dose of it than others. Thus it is a well-known fact, that felons have worn clothes without injury, which, nevertheless, communicated infection to fresh persons, in a court of justice.

With respect to the period at which typhus fever becomes infectious after its commencement, Dr. Haygarth has not been able to determine. The latest period of infection appeared to him to vary from a few days to two months, without any regularity as to this point.

Sometimes the season of the year is such as to predispose to attacks of this fever, and to render it epidemical: the months of October and November are those in which it is usually most prevalent.

Typhus mitior generally comes on with a remarkable mildness in all its symptoms; and although the patient experiences some trifling indisposition for several days, still he has no reason to suspect the approach of any severe disease. At first, no rigors are perceived, there being only a slight chilliness, which is not succeeded by any increase of heat, or redness of the face; on the contrary, it is unusually pale and sunk. He perceives, however, some degree of lassitude and debility, with anxiety, dejection of spirits, sighing, and a loathing of food; and towards evening these affections are somewhat increased.

In the course of a few days, and as the disease advances, there arise a difficulty of breathing, oppression at the chest, pains in the head, accompanied with a confusion of ideas; there is great depression of strength, even to fainting, whenever the patient attempts to sit up; the tongue becomes dry, and is covered with a dark brown fur; the teeth are thickly incrusted with the same; the pulse is small, low, and frequent, and now and then intermits; cold clammy sweats break out on

* See his letter to Dr. Percival on the Prevention of infectious Fevers.

the forehead and backs of the hands, while the palms glow with heat; the urine is pale and watery, like whey; the whole nervous system is much affected with tremors and twitchings; involuntary motions of the muscles and tendons arise; the patient picks at the bed-clothes almost incessantly, and either mutters to himself or talks incoherently. There is seldom, however, any great delirium, nor is this fever ever attended with violent ravings, or with any fulness of the vessels of the head; but there is usually a dilatation in the pupils of the eyes.

In the progress of the disease, the system is unequally affected; for sometimes head-ach, restlessness, and uneasiness, prevail in a high degree, while at the same time the tongue is clean and moist; and at other times, while there is no head-ach or restlessness, the tongue will be dry and foul, and profuse sweats will break out. This fever, moreover, is not only thus irregular in affecting various parts of the body differently, but it is also irregular in its exacerbations; and these, instead of taking place in the evening, will arise often in the morning. Again, sometimes the fever is very violent for the first three or four days; it then diminishes for a time, and then perhaps increases again. Evacuations, such as sweating and purging, are very apt to ensue in the course of the disease, which never fail to exhaust the patient.

In about the middle of typhus fever, a great discharge of saliva sometimes occurs, which has been thought critical; but as it now and then continues two, or even three weeks, without affording any relief to the patient, it may be concluded to arise from some accidental circumstance, perhaps not unlike to the ptyalism that sometimes takes place in hysteria.

Typhus mitior frequently runs on for some weeks, and produces such a state of debility as to destroy the person from that cause alone, or it degenerates into typhus gravior; but when it terminates favourably, it usually goes off about the fourteenth or twentieth day, perhaps, either by a diarrhœa, or by a gentle moisture diffused equally over the whole body; but often it exceeds a month in duration, and there is no other evident crisis than the urine becoming turbid, and depositing a sediment.

Profuse evacuations by sweating or purging, much watchfulness, sinking of the pulse, great incoherency of ideas, mutterings, picking at the bed-clothes, considerable dilatation of the pupils of the eyes, involuntary discharges by urine and stool, starting of the tendons, and hiccups, point out the near approach of death; whereas, on the contrary, the pulse becoming fuller and more slow, the tongue moist, respiration free, a gentle moisture coming on about the fourteenth day, tumours appearing behind the ears, or miliary eruptions, unattended by profuse sweats, being perceived on the body, promise a favourable termination.

The usual appearances on dissection are, a softness and flaccidity in the solids; a dissolved state of the fluids, particularly of the blood; collections of sanious matter in the different cavities; turgescence and inflammation of the thoracic and abdominal viscera; and in the interior parts of the brain, collections of a serous fluid.

From the very gradual manner in which this fever comes on, the great mildness of the symptoms at its commencement, and the time that usually elapses previous to absolute confinement, it is seldom that practitioners have it in their power to cut short its progress by a timely exhibition of proper remedies.

If there is any nausea or vomiting at the time of applying for advice, it will be right to recommend a gentle emetic of about fourteen or sixteen grains of ipecacuanha, to be immediately taken; or should any costiveness prevail, we may prescribe some laxative medicine, to carry off the feculent matter; and to insure and keep up a regular alvine evacuation in the further course of the disease, it will be proper to repeat this from time to time, or to have recourse to emollient laxative clysters. In many instances, however, the stimulus of the latter being limited merely to the rectum, may not be adequate to procure so complete an evacuation as may be necessary; and therefore, in these cases, we ought to employ aperient medicines that will dislodge, and bring off whatever feculent matter may be contained in the bowels, which by long retention might be likely to prove highly offensive, as well as irritating. In administering purgatives, we ought, at the same time, to guard against employing them in such doses, as to excite unusual secretion into the intestines, or watery stools, as we should thereby induce great debility. Small doses of calomel, and jalap, or a solution of some mild neutral salts, will be the most proper medicines of this class.

Bleeding is a remedy not to be resorted to in this fever.

In temperate and cold latitudes, and in the winter season of the year, it is by no means an uncommon occurrence to meet with typhus complicated with more or less of topical inflammation of the thoracic viscera. In such cases, I have known venesection to have been employed; but even in these, it has appeared to me to be detrimental, and in two instances which lately fell under my observation, seemed indeed to have destroyed the patients. Instead, therefore, of having recourse to the lancet, where topical inflammation of the viscera of the thorax attends on typhus, I would recommend drawing blood from the chest, either by means of eight or ten leeches, or by the application of a scarificator and cupping-glass, and repeating them as the occasion may require.

Affusing the body with cold water, is one of the most powerful and efficacious means which we can make use of in typhus fever; but its effects will be more salutary in proportion as it is adopted early, or during the first stage of the disease. Such being an indisputable fact, established upon the firmest basis, we ought always to employ it very soon after we have evacuated the contents of the alimentary tube in the manner just mentioned.

We are informed by Dr. Currie,* that the safest and most advantageous time for using cold water, either in aspersion or affusion (but he gives a preference to the latter,) is when the exacerbation is at its height, which is marked by increased flushing, thirst, and restlessness; or immediately after its declination has begun, which induced him to

* See his Medical Reports on the Effects of Water in Fevers, &c.

direct its being employed from six to nine o'clock in the evening; but he thinks that it may be used at any time of the day, when there is no sense of chilliness present; when the heat is steadily above what is natural, and when there is no general or profuse perspiration. During the cold stage of the paroxysm of fever, while there is any considerable sense of chilliness present, or where the body is under profuse sensible perspiration, this remedy ought never to be employed, as we might extinguish life by it.

When cold affusion is used in the advanced stage of typhus, where the heat is reduced, and the debility great, some cordial, such as wine warmed with an addition of spice, or even brandy, should be given immediately after it. In the early stage of the disease, cold affusion appears to cut short the progress of the disease. At more advanced periods, when the strength of the patient, and other circumstances, will admit of its application, it will seldom fail to moderate the symptoms, and materially contribute to a favourable termination.

Whilst cold water dashed forcibly from a pail, or falling from a height in considerable quantity from a garden watering-pot, is decisively impressive, and ordinarily safe, when employed in an early stage of this, and other typhoid fevers; so aspersion, or ablution of the body by means of a sponge, will be more eligible and safe in the advanced periods. The effects produced by both modes are grateful and refreshing to the patient, and they usually bring about an abatement of fever, followed by more, or less, of a diaphoresis, and this again by a refreshing sleep.

We have lately been gratified with an ingenious publication from the pen of Dr. Jackson, on the subject of cold affusion;* and although he agrees with Dr. Currie as to its utility and propriety in the milder forms of fever (whether infectious, and such as is usually called typhus, or endemic, such as arise from the action of common causes in a diffused form,) in the early stages of fever, still he differs from this gentleman on other important points.

Dr. Currie had employed the affusion of cold water in the mild and open forms of fever, without any previous preparation, and likewise in those which are violent, concentrated, and complicated, provided the temperature of the body, on being measured by a thermometer, was higher than the natural standard; but when lower than this, he advises us to abstain from its application. Dr. Jackson, in resorting to it, is guided by what he terms the evidences of a susceptible condition of the system, connected with a simple condition of the disease being obvious, of the presence of which, he judges by the sensation communicated to his hand in touching the patient's body. Where he finds this deficient in any degree, or where it is unusually distributed on the surface, and unaccompanied by any primary mark of local inflammation, or congestion of any one of the internal organs being discernible, he endeavours to restore the susceptibility of impression, by conducting the patient into an apartment, where the air is of a high temperature; by applying warm

* See his Exposition on the Practice of applying cold in Fevers.

fomentations to the extremities; by purifying the skin by warm water, soap and brushes, and then by immersing the whole body in a warm bath, or by affusing warm water generally over its surface. Where there is either a violent or rapid action, or a sluggish circulation, he does not consider these as proper conditions for the cold affusion, but to make them so, he recommends the preparatory process of general bleeding, and other evacuations; whereas Dr. Currie considered venesection unnecessary to a previous use of cold affusion, except in cases of idiopathic inflammation.

The affusion of cold water on the surface of the body, is considered by Dr. Jackson as a power which makes a strong and general impression on the system, and which arrests the disease, or changes its condition in virtue of that impression; but not by subtracting increased heat, as supposed by Dr. Currie. Indeed, the good effects of the remedy in question cannot, I think, be wholly owing to the mere subtraction of heat; for it has been used with great advantage in many cases of fever, where there has been no perceptible increase of temperature, and where, by affusion, ablution, or aspersion with cold water, the disease has been cut short abruptly, as well as in those where it had risen to a high point.

Although medicines which might excite profuse sweating would be highly improper in this fever, still we may venture to give those* possessed of a mild diaphoretic power. Antimonials do not seem very advisable in the true typhus.

In the progress of the disease, it has been usual, when particular affections arise, such as either a difficulty of breathing, violent pains in the head, delirium, or stupor, to excite an inflammation in the neighbourhood of the part affected by the application of a blister, and not unfrequently the poor patient has been tortured with half a dozen at a time in the advanced stage of the disorder. This practice is certainly very reprehensible. The application of even a single blister to the back or head in this fever, with the view of relieving stupor and coma, is much disapproved of by many physicians, and Dr. Darwin mentions† that he has seldom seen any beneficial effects derived from it, but on the contrary a prejudicial one. The observation is perfectly just, and therefore I cannot advise the remedy.

Where stupor, coma, or delirium prevail, the pediluvium, together with frequent washings of the temples, and whole of the head (having it

† See his Zoonomia.

* ℞. Succi Limon. ℥ss.
Kal. Præpar. ʒj.
Aq. Cinnam. ℥j.
Confect. Aromat. gr. xv.
Syrup. Zingib. ℥ij. M.
ft. Hauſtus 4tis horis ſumendus.

℞. Miſturæ Camphorat. ℥x.
Aq. Ammon. Acetat. ℥iij.
Spirit. Æther. Nitros. ℥ss. M.
ft. Hauſtus 3tia hora capiendus.
Vel
℞. Camphor. gr. iv.
Pulv. Contrayerv. C. gr. x.
—— Ipecac. gr. ij.
Conſerv. Roſæ q. s. M.
ft. Bolus 6tis horis ſumendus

properly shaved,) with cold water and vinegar, or applying linen cloths dipped in æther to these parts, may be substituted.

If a purging arises, it is to be stopped by having recourse immediately to astringents,* as advised below; but in the progress of the disease, if a gentle diarrhœa takes place, and seems likely to prove critical, it should by no means be checked.

Profuse sweats are to be obviated by the person being lightly covered with bed-clothes; by keeping his hands and arms uncovered; by admitting fresh air freely into his chamber, and by giving him whatever he drinks, cool, and properly acidulated with lemon or orange juice.

Delirium is very apt to arise in typhus from a want of sleep, and to make it necessary to have recourse to opium in order to procure it. The most advisable way of using it in such cases, is to combine it with some gentle diaphoretic.† By giving it in this manner early in the evening, we shall in general experience the most beneficial effects from it.

Opiates are indeed more admissible in this species of fever than in any other; and it seems now to be the universal practice to give one every night during its whole continuance. The best effects have been obtained from this mode of proceeding, as I have witnessed in innumerable instances, and therefore I almost invariably adopt it.

To support the patient's strength, it will be necessary to allow a liberal use of wine, which is preferable to all other cordials. Its quantity should be proportioned to the degree of debility present, and to the effect it produces on the patient. Sago, gruel, panado, arrow-root, and the like, mixed with a due proportion of it, must be given to him as food; and wine-whey, or small negus, sharpened with the juice of orange, will be most proper for ordinary drink. Wonderful, indeed, are the effects produced by wine in typhus fever, as we often see persons recover by a free use of it, under the most unpromising circumstances.

A late physician‡ of great celebrity recommends wine and opium, in small quantities, repeated every three hours alternately, and this with the view of rousing the system from a state of torpor and debility. Where wine disagrees with the patient, or fails to produce the desired

‡ Dr. Darwin.

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* ℞. Mistur. Cretac. ℥iv.
Extract. Lign. Camp. ℥j.
Tinct. Catechu ʒij.
Aq. Cinnam.
Spirit. Pimento ää ℥j.
Tinct. Opii gutt. xl. M.
ft. Mistura cujus sumat Cochl. ij. magna ʒtia quaq. hora.

Vel

℞. Pulv. e Cret. cum Opio gr. xij.
Gum. Kino gr. v.
Confect. Aromat. gr. x.
Syrup. Zingib. q. s. M.
ft. Bolus ter quaterve die sumendus.

† ℞. Aq. Ammon. Acetat. ℥iij.
—— Cinnam. ℥j.
Tinct. Opii gutt. xl.
Syrup. Zingib. ʒij. M.
ft. Haustus.

Vel

℞. Mistur. Camphorat. ℥j.
Vin. Antim. gutt. xx.
Syrup. Papav. Alb. ʒiij. M.
ft. Haustus.

effect, brandy, properly diluted, may be substituted. In advising a free use of wine with opium, I must at the same time caution the practitioner not to run into excess, and over-stimulate the patient, as this might destroy him.

Throughout the whole course of the disease he should be kept perfectly quiet, and none but those whose business it is to attend on him ought to go near him, except in those cases where the symptoms are very mild, and where there is little or no affection of the head. In such cases, the presence of a friend may sooth the mind, and help to dispel gloomy ideas. The chamber should be kept freely ventilated and cool, and his bed be lightly covered with clothes; he should be solaced and comforted with the hope of a speedy recovery, and his thoughts be diverted from that anxiety and dread of danger which invariably attend the complaint.

Many practitioners are in the habit of giving the Peruvian bark in this fever, without waiting for even the most imperfect crisis; some having in view its supposed febrifuge qualities, and others, its tonic powers. In mild cases, where there prevails hardly any stupor, or other affection of the head, and where the remissions are regular, it may perhaps be of service; but in a state of convalescence it will prove highly beneficial, and may therefore be given either in substance, decoction, or infusion, as may be found to sit best on the stomach. Where the skin and tongue are dry, where the remissions are irregular, and where the fever abates for a day or two, and then returns with violence, I have always found it prove prejudicial.

Miliary eruptions sometimes appear as the crisis to this fever; they ought therefore by no means to be checked by any kind of evacuation, nor should the patient, on the contrary, be kept too warm in order to force them out.

Where there prevails any unusual coldness in the lower extremities, the application of a couple of small blisters to the inside of the legs, or of stimulating cataplasms to the soles of the feet, will be proper.

In bad cases, where startings of the tendons and hiccups arise, besides making use of the means advised, it may be necessary to have recourse to antispasmodics,* such as musk, ammonia, æther, camphor, and opium.

If this fever threatens in its progress to degenerate into typhus gravior, we should administer the mineral acids, but more particularly the mu-

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* ℞ Mosch. gr. x.
Aq. Cinnam. ℥jss.
Æther. Vitriolic. gutt. xx.
Tinct. Opii. gutt. xv. M.
ft. Haustus ter in die sumendus.
Vel

℞. Castor. gr. x.
Camphor. gr. iv.
Opii gr. ss.
Confect. Aromat. q. s. M.
ft. Bolus 6ta quaq. hora sumendus.
Vel

℞. Misturæ Moschat.
—— Camphor. āā ℥iij.
Spirit. Æther. Vitriol. C. ℥ij. M.
ft. Mistura de quo capiat Cochl. ij. magna tertia quaque hora.

riatic, in such doses as the patient is capable of bearing. To prevent its affecting the stomach and bowels, a few drops of tinctura opii may be added to each dose. An infusion of cinchona or columbo may be employed as the vehicle, or we may give the acid in a little wine and water. See Typhus Gravior.

In an advanced stage of this disease, it sometimes happens that little white ulcers or aphthæ appear in the inside of the mouth and fauces. In such cases, a gargle composed of borax, honey, and an infusion of roses, should be used three or four times a day.

When the fever goes off, and the patient has somewhat regained his strength, he may take daily exercise on horseback or in a carriage; and in order to remove the irritability and weakness which are left behind, he should enter on a course of the bark and other tonics. After a little time, the cold bath will be a proper remedy, if the season of the year is such as to admit of it. If the appetite does not readily return on the cessation of the fever, stomachic bitters* will be proper. See Dyspepsia.

A degree of mania, or temporary alienation of the mind, sometimes arises at the close of typhus. All that can be done in such a case is, to support the patient with a generous nutritive diet; to keep him as quiet and tranquil as possible; and to put him under a course of tonics, carefully avoiding all evacuations.

As this fever is of an infectious nature, every endeavour should be exerted for suppressing its further propagation, and for wholly destroying its contagion, by a strict attention to cleanliness, free ventilation and fumigations, as recommended under the following head.

As circumstances may occur for rendering it necessary to remove patients labouring under typhus fever to some distance, it is important to know that this may be effected without subjecting them to any risk. Indeed, considerable benefit has been derived on such occasions by conveying the sick in open carriages, or spring waggons,† for several miles freely exposed to the air.

Of the PUTRID and MALIGNANT FEVER, or TYPHUS GRAVIOR.

THIS fever takes its name from the malignancy of its nature, and the evident symptoms of putrefaction which are to be observed, after a con-

† See Outlines of the History and Cure of Fever, by J. Jackson, M. D.—Remarks on the Constitution of the medical Department of the Army, by the same.

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* ℞. Infus. Gentian. Comp. ℥iv.
Tinct. Card. C.
—— Columb. āā ℥fs. M.
Capiat Cochl. ij. mane, hora meridiana, et Vespere.
Adde pro re nata
Acid. Sulphur. Dilut. gutt. xx.

Vel

℞. Pulv. Sem. Card.
—— Gentian.
Columb āā gr. x.
Syrup. Zingib. q. s. M.
fi. Bolus ter in die sumendus.

tinuance of some days. It is to be readily distinguished from the inflammatory, by the smallness of the pulse, the sudden and great debility which ensues on its first attack, the brown, or black tongue; the dark and fetid sordes about the teeth, the livid flush of the countenance, and the acrid and more intense heat of the skin; and, in its more advanced stage, by the petechiæ, or purple spots, which come out on various parts of the body, and the fetid stools which are discharged; and it may be distinguished from typhus mitior, by the great violence of all the symptoms on its first coming on.

The most general cause which gives rise to this disease is contagion, applied either immediately from the body of a person, labouring under it, or conveyed in clothes or merchandize, &c.; but it may be occasioned by the effluvia arising either from animal or vegetable substances, in a decayed or putrid state; and hence it is, that in low or marshy countries it is apt to be prevalent when intense and sultry heat quickly succeeds any inundation. A want of proper cleanliness, and confined air, are likewise causes of this fever; hence it prevails in hospitals, gaols, camps, and on board of ships, especially when such places are much crowded, and the strictest attention is not paid to a free ventilation and due cleanliness. A close state of the atmosphere, with damp weather, is likewise apt to give rise to typhus gravior.

Those of lax fibres, and who have been weakened by any previous debilitating cause, such as poor diet, long fasting, hard labour, continued want of sleep, &c. are most liable to attacks of it. We are, therefore, to look on these as so many predisposing causes.

It has been denied by some physicians of the present time, that either the plague, yellow fever, or typhus, are contagious diseases; and it is true indeed, that we cannot, in every case, ascertain that the complaint originated from a communication with diseased persons; nor will the actual communication always produce fever: many predisposing causes are requisite, and moreover, the human constitution is evidently less susceptible of disease at one time, than at another. Whoever has paid proper attention to the symptoms of typhus, may, however, be induced readily to conclude that the surrounding atmosphere, to an extent more or less great, particularly in small, close rooms, may become sufficiently impregnated with the particles continually exhaling from the diseased body, to infect other persons with a similar disease.

Some writers have supposed infants to be as liable to fevers as adults, and from the same causes, but I cannot agree with them; for I have observed that infants do not readily take fevers, although exposed for a long time to that contagion which has appeared to affect adults round them; and every physician who attends lying-in hospitals must not only have known many infants suckled without injury, through the whole stage of bad fevers, from which their mothers have recovered; but also, in other instances, sucking greedily within an hour or two of their mother's death.

On the first coming on of typhus gravior, the person is seized with languor; dejection of spirits; amazing depression and loss of muscular strength; universal weariness and soreness; pains in the head, back,

and extremities, and rigors; the eyes appear full, heavy, yellowish, and often a little inflamed; the temporal arteries throb violently; the tongue is dry and parched; respiration is commonly laborious, and interrupted with deep sighing; the breath is hot and offensive; the urine is crude and pale; the body is costive, and the pulse is usually quick, small, and hard, and now and then fluttering and unequal. Sometimes a great heat, load, and pain, are felt at the pit of the stomach, and a vomiting of bilious matter ensues.

As the disease advances, the pulse increases in frequency (beating often from 100 to 130 in a minute;) there is vast debility; great heat and dryness in the skin; oppression at the breast, with anxiety, sighing, and moaning; the thirst is greatly increased; the tongue, mouth, lips, and teeth, are covered over with a brown or black tenacious fur; the speech is inarticulate, and scarcely intelligible; the patient mutters much, and delirium arises. The fever continuing to increase still more in violence, symptoms of putrefaction shew themselves; the breath becomes highly offensive; the urine deposits a black and fetid sediment; the stools are dark, disagreeable, and pass off insensibly; hemorrhages issue from the gums, nostrils, mouth, and other parts of the body; livid spots or petechiæ appear on its surface; the pulse intermits and sinks; the extremities grow cold; hiccups ensue; and death at last closes the tragic scene.

When this fever does not terminate fatally, it generally begins, in cold climates, to diminish about the commencement of the third week, and goes off gradually towards the end of the fourth, without any very evident crisis; but in warm climates it seldom continues above a week or ten days, if so long. Our opinion as to the event, is to be formed by the degree of violence in the symptoms, particularly after the appearance of petechiæ, although, in some instances, recoveries have been effected under the most unpromising appearances. An abatement of febrile heat and thirst; a gentle moisture diffused equally over the whole surface of the body; loose stools; turbid urine; rising of the pulse; a free secretion of saliva; tumor and suppuration of the parotid, axillary, or inguinal glands; a scabby eruption about the mouth, and the absence of delirium and stupor, may be regarded in a favourable light. On the contrary, great muscular debility, very difficult and laborious respiration, stupidity and listlessness of the eyes, perpetual writhing of the body, petechiæ, with dark, offensive, and involuntary discharges by urine and stool, fetid and cadaverous sweats, hemorrhages, subsultus tendinum, and hiccups, denote the almost certain dissolution of the patient.

The appearances usually perceived on dissection are, inflammations of the brain and viscera, but more particularly of the stomach and intestines, which are now and then found in a gangrenous state. In the muscular fibres there seems likewise a strong tendency to gangrene.

On the very first taking place of any of the symptoms of this fever, we should immediately attend to them, and endeavour to prevent any bad consequences from ensuing, as they will never go off of themselves, but will continue to increase, until a disease of a most dangerous nature takes place. This being the case, we should resort to proper remedies

at the first onset, and not wait until the body is enervated. The most proper remedy at first, will be an emetic of about fifteen grains of ipecacuanha with one grain of tartarized antimony, which may be worked off with an infusion of chamomile flowers; and after the operation of this is over, the bowels may be opened with some gentle laxative.* Possibly, calomel may be preferable to any other. Should the desired effect not be produced by the medicine, an aperient clyster may be administered.†

These steps being pursued, and the nature of the disease clearly ascertained, I would advise the ablution of the patient with cold water, or rather a general affusion, provided the heat of the body is steadily above the temperature of health. The good effects of this mode of practice I have often experienced.

The late Dr. Currie, of Liverpool, reports, that this fever having made its appearance in a regiment quartered in that town, he had the men drawn up and examined, seventeen of whom were found with symptoms of it upon them: these he subjected to the cold affusion once, or sometimes twice a day. In fifteen of this number, the contagion was extinguished, and in the remaining two the fever went through its course. The healthy part of the regiment bathed in the sea daily, and by these means he effectually destroyed the contagion. He further relates, that of thirty-two who went through the disease, by its being too confirmed to be removed at the time of his first seeing them, only two died; and with these, the cold affusion was not had recourse to.

This gentleman's report, with the authorities of other practitioners of eminence, clearly prove the application of cold water by affusion on the first attack of the complaint to be, under certain restrictions, an efficacious remedy for stopping its progress, as likewise that of other low contagious fevers.

Doctor Currie found, that the most advantageous time for using the cold affusion is, when the exacerbation is at its height, or immediately after it is begun, which is generally from six to nine in the evening; but he observes it may be used with safety at any time of the day, when there is no great sense of chilliness present; when the heat of the surface is steadily above what is natural; and when there is no general or profuse perspiration.

The same remedy has likewise been successfully employed by him and many others, in the more advanced stage of the fever, so as seldom

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* ℞. Mann. Optim. ℥ss.
Crystal. Tartar. ʒij.
Aq. Fervent. ℥iij. M.
ft. Solutio pro dos.

Vel

℞. Kali Tartarisat. ʒiij.
Mann. Optim. ʒij.
Aq. Fervent. ℥iij.
— Cinnam. ʒss. M.
Capiat dimidium pro dos.

Vel

℞. Calomelanos gr. v.
Extract. Colocynth. C. gr. iij.
Fiant pilulæ No. iij. pro dos.

† ℞. Decoct. pro Enemate ℥xij.
Magnes. Virriolat. ʒss.
Ol. Olivæ ʒj. M. ft. Enema.

to fail of procuring a safe termination. He relates the case of a soldier who was in the ninth day of the disease when he first saw him: his pulse was 100 and feeble, his heat about 104, his thirst very great, his tongue foul and black, his mind much confused, and at times he was delirious, and petechiæ were dispersed over his whole body.—The mode of treatment was as follows: his strength was directed to be supported by administering a bottle of wine a day, with an equal quantity of gruel; every night he took an opiate draught, and his body was kept open by laxative clysters, and when these failed, by a few grains of calomel. A bucketfull of salt water was directed to be thrown over him immediately, which was to be repeated according to circumstances.

The effect was, that, in a few minutes after the effusion, the heat lessened to 98, the pulse moderated to 96, and his mind became more calm and collected. Two hours afterwards he had relapsed nearly into his former state, but the night was passed with greater tranquillity. The whole of this practice was continued, with nearly the same result, until the twelfth day of the disease, the affusion having been performed in the evening, and occasionally at noon. The fever continued its usual period; but on the twelfth day, the heat having sunk to its natural standard, the cold affusion was thenceforth omitted, and instead of it, the body was sponged all over once or twice a day with vinegar.

In those cases where the fever had been of eleven, twelve, or thirteen days standing, and the heat of the body was inconsiderable, he thought it prudent to make the degree of cold very moderate, and in some instances he substituted tepid ablution, or sponged the body over with vinegar by itself or diluted with water.

Some communications to Dr. Currie from Mr. Marshall, surgeon of the Cheshire regiment, bear further testimony of the good effects of this remedy in typhus fever. In sixty cases out of sixty-four, in which it was employed at an early period, the disease was arrested by having recourse to it three or four times, and in the other four which were advanced in their progress, although the disease was not stopped from going through its natural course, still all the patients recovered. Mr. Marshall mentions, that from the time he began the cold affusion he used little or no wine, no opium, nor indeed scarcely any other remedy in any one case in which the cold affusion was employed; which report is of itself sufficient to establish its decisive superiority over every other mode of treatment.

It is, however, in the early stages of low contagious fevers, that we can employ it with most advantage. It has indeed been used by many practitioners, in some instances, so late as the twelfth or even the fourteenth day with safety and success; but it can only be employed at this advanced period, in the instances in which the heat keeps up steadily above the natural standard, and the respiration continues free. In such cases it has been observed to appease agitation and restlessness, dissipate delirium, and, as it were, snatch the patient from impending dissolution. When the remedy is to be had recourse to, every arrangement should be made for the affusion before the patient is moved at all, and fatigue as well as disquiet should be avoided as much as possible.

In those cases where the delicacy of the system, or the apprehensions of the patient or of the by-standers, may prevent cold affusion from being employed, we may substitute tepid affusion for the more powerful remedy, or we may recommend either ablution or aspersion.

A memorable instance of the good effects of cold affusion came under my immediate knowledge some years ago, whilst I practised in the West-Indies. A professional gentleman of my acquaintance, residing in the island of Nevis, was attacked with this fever, and it proceeded with such violence, that in a few days petechiæ appeared on different parts of his body, and a hemorrhage of blood issued from his nostrils, mouth and other places. Under these unfavourable circumstances he was freely exposed to the open air, and one or two buckets of cold water were thrown over him; he was then wiped perfectly dry, and replaced in his bed; which plan of proceeding was repeated twice and sometimes thrice a day. By means of this application, the administration of an opiate at night, and a liberal allowance of wine, his life was preserved to the great, but pleasing, astonishment of all his friends.

Of late years I have been much in the habit of recommending cold affusion or ablution in most cases of typhus fever, and with very beneficial effects. The same practice has been adopted in the London house of recovery, and apparently with the most decided success. Obvious, however, as are the advantages to be derived from the remedy in question, still there are many practitioners, who look on it as an innovation, and are therefore averse to it. This prejudice, I hope, will soon subside.

In the early stage of typhus, the superior efficacy of affusion over ablution is unquestionable; its operation extends beyond the mere abstraction of heat from the surface; it acts powerfully on the nervous system. Besides its effectually removing the uneasy sensation of heat in the beginning of febrile diseases, and thus indirectly recruiting the animal powers, it induces sleep. We well know that when any disagreeable sensation is removed, sleep soon follows; and it happens so in this instance. After the fourth or fifth day of fever, the influence of both affusion and ablution is greatly diminished, and not sufficient to interrupt the morbid actions; at a still more advanced stage the heat is removed nearly in the same degree by washing the surface of the body with a wetted sponge, or cloths dipped in water, as by pouring cold water on the naked body; and the patient is relieved nearly the same by one mode of treatment, as by the other. Thus much for the comparative merits of affusion and ablution.

In the advanced stages of typhus gravior as well as of typhus mitior, where either the affusion of water of a low temperature, the immersion of the patient, or even the sprinkling his body with cold water, might in the least endanger our arresting the movements of life, we should always take the precaution of giving a glass of warm wine, or some other powerful cordial, immediately after employing the remedy.

It is no uncommon occurrence for the symptoms to run very high at the commencement of this fever, so as to give it rather an inflammatory

appearance, which has induced practitioners, at times, to draw off blood, by opening a vein; but sad experience has fully evinced the impropriety of so doing. Contagion certainly weakens the force of the solids; for which reason, whenever we suspect a fever to have arisen from this cause, we should proceed with the greatest caution in drawing blood, even although the symptoms may run pretty high at the beginning, and may seem actually to demand the taking away a considerable quantity.

Instead, therefore, of bleeding, or using any other evacuation than keeping the body open with mild laxative medicines, we should support the patient by allowing a liberal use of wine. It may be given in panado, gruel, or whatever he takes for food, and likewise in his drink, observing to dilute it properly, and to add some grateful acid, such as the juice of oranges.

The mineral acids likewise are, beyond all doubt, better remedies in this and other malignant diseases, than we have been accustomed to regard them; and from having employed them, but more particularly the muriatic, for several years with very great success in typhus gravior, I can vouch for their efficacy. My usual plan of proceeding is as follows: Having relieved the stomach by a gentle emetic where nausea prevails, cleared the bowels of their feculent contents by a proper dose of calomel joined with a few grains of the extract. colocynth. c., and subjected the patient to cold affusion when the circumstances already noticed have admitted of it, I prescribe for adults, ten or twelve drops of the muriatic acid guarded with five drops of tinctura opii, and as a vehicle I employ about an ounce and a half of an infusion of columbo. This draught I direct to be repeated every four hours, gradually increasing the quantity of the acid in each, to eighteen or twenty drops or more. When the fever begins to decline, or to show remissions, I substitute a decoction of cinchona instead of the infusion of columbo.

The effects of the muriatic acid in all febrile diseases of a malignant nature are truly great; and from using it in all such cases, my practice has been attended with the most decided success. As a confirmation of its utility, it is proper to mention that a considerable pension has been granted by the King of Prussia to Dr. Reich, professor of medicine at the university of Erling in Franconia, for making known a remedy by the use of which, all danger was removed in acute diseases of a malignant nature, and that, on a disclosure of the secret, it proved to be the acids containing oxygen, but particularly the muriatic. In cases of extreme danger, we are told by him,* that one or two drachms of the acid may be given at once. The discovery, however, cannot be claimed by the Prussian professor, as it is well known that the late Sir William Fordyce highly recommended the muriatic acid to be given internally in diseases of a putrid or malignant nature, and likewise to be applied in the form of gargle to the sloughs of the throat which often accompany such fevers.

A material circumstance to be attended to, not only at the com-

* See a translation of his German work, by Dr. Parry, of Bath.

mencement of this fever, but through its whole course, is to cover the patient lightly with bed-clothes, and to keep his apartment cool and properly ventilated, by allowing a regular and free admission of fresh air into it; and in order to render it pleasant both to himself and his attendants, it ought to be sprinkled several times a day with warm vinegar and camphorated spirits. Fumigations in the manner herein after noticed will also be advisable. Cleanliness in the strictest sense of the word is to be most carefully attended to; and therefore not only the bed and body linen should be changed frequently, but whenever a motion takes place, it ought immediately to be removed.

The viscid phlegm which collects about the tongue and teeth should be coagulated by some austere acid, and then it may be scraped off by a knife; or be wiped away with a bit of flannel dipped in vinegar or salt and water.

Although there is not usually any regular crisis to this fever, still nature sometimes endeavours to throw it off by a gentle moisture diffused equally over the whole surface of the body: to promote this, we may advise some gentle diaphoretic;* but we are carefully to guard against exciting profuse sweats, which would certainly prove highly prejudicial. A physician § of some eminence, speaks highly of the effects of the spiritus ætheris vitriolici in this fever, when given with antimonials, as having an advantage over most cordials in not increasing the heat of the body or quickening the pulse; but, on the contrary, rendering the action of the heart more regular and slow, and, moreover, proving serviceable in promoting a diaphoresis, and lessening anxiety and tremors.

In the first stage of the disease, where there arises any violent affection of the head, or any great difficulty of breathing, it has been usual to apply a blister to the neighbourhood of the part affected; but blistering seems a doubtful remedy in typhus gravior, as well as in the mild species of the disorder. Where stupor prevails, with little or no delirium, we need not employ it; but where the delirium is violent and accompanied with great wildness of the eyes, so as to threaten a phrenitis, we may recommend it. After symptoms of putrescency have become obvious, the application of a blister would be highly improper.

When hemorrhages ensue and petechiæ have appeared on the body, we should have recourse to the most powerful antiseptics, such as vegetable and mineral acids, carbonic acid in every form, liquors in a state of fermentation, oxygen gas, oxygenated muriate of potash,†

§ Dr. Carmichael Smyth.

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* ℞. Camphor. gr. iv.
Pulv. Ipecac. gr. iij.
Confect. Aromat. ℈j. M.
ft. Bolus 6ta hora fumendus.

† ℞. Muriat. Potaſſe Oxygenat. ℥ſs.
Tinct. Cinnam. Comp. ℥ij.
Aq. Cinnam. ℥iſs.
Syrup. Cort. Aurant. ℥j. M.
ft. Hauſtus 2da vel 3tia hora capiendus.

aërated waters, wine, cold affusion, and bark.* We may also administer clysters of diluted vinegar,† or crystallized acid of lemons in moderate quantities, that they may remain in the rectum, and thereby be likely to be absorbed.

The exhibition of fixed air has been recommended in this fever. The Rev. Edward Cartwright, having read of the power of fixed air in preserving meat from putrefying, was induced to make trial of it on a boy of fourteen years of age who had been ill several days of a putrid fever, for which bark and wine had been exhibited without any apparent advantage, and where there was but little hope of a recovery. He directed two table-spoonfuls of yeast to be taken every three hours, which having been complied with, the boy found almost immediate relief, and recovered very quickly. Mr. Cartwright reports, that he gave the same remedy to above fifty patients in this fever, without losing one.

With respect to the use of yeast internally in this fever, some practitioners have looked upon it rather as a doubtful remedy, although they readily subscribed to its good effects as an external application in fetid putrid ulcers. I have made trial of it, and, as I conceive, with some advantage; nor did it in a single instance excite any commotion or disorder, either in the stomach or bowels of my patients, as some have reported to have happened with them on making use of it. As the good effects of yeast seem to depend on the fixed air which it contains, it is probable that we might substitute water impregnated with the gas to great advantage, as we should thereby avoid the disagreeable consequences attributed to it. The mode in which I administered yeast was by adding one or two table-spoonfuls of it to a quart of an infusion of malt or mild porter, of which the patient took a wine-glassful very frequently.

Whatever may be the mode of action of yeast in typhus, the fact appears to be indisputable that fixed air takes off that extreme debility of the stomach so conspicuously marked in disorders of this nature; and in proportion as that subsides, the pulse rises, becomes slower and fuller, the burning heat on the skin disappears, and a truce is gained for the reception of nourishing supplies.

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* ℞. Cort. Peruv. Craſs. ℥ſs.
Rad. Serp. Virg. ℥iij.
Coque in Aq. Fontan. ℔j. ad ℔ſs.
Colat. adde
Tinct. Cinnam. ℥j. M.
ft. Decoctum, cujus ſumat uncias duas ſecunda quaque hora cum Acid. Nitros. guttis x.—xv.

Vel

℞. Pulv. Cinchon. ℥ſs—℥j.
Tinct. Ejuſdem ℥ij.
Aq. Cinnam. ℥jſs.
Tinct. Opii gutt. viij.
Acid. Muriat. gutt. viij.—xv. M.
Pro hauſtu ſecunda vel tertia quaque hora ſumendo.

Vel

℞. Decoct. Cinchon. ℥jſs.
Tinct. Ejusdem ℥iij.
Acid. Muriat. Oxygenat. gutt. xv.—xx. M.
ft. Hauſtus 3tia quaque hora capiendus.

† ℞. Infus. Chamæmel. Flor. ℥v.
Aceti Communis ℥iij. M.
Pro Enemate.

Vel

℞. Decoct. pro Enemate ℥vj.
Aceti Communis ℥ijſs. M.
ft. Enema.

For the healing of ulcers in the mouth, we may employ a solution of alum in water (an ounce of the former to a pint of the latter,) as a gargle, which will quickly take away the stench that arises from them.

In typhus gravior it is of the utmost consequence to procure rest, and therefore, where there is no great delirium, we may give an opiate towards bed-time. Combining it with some diaphoretic* will prevent any deleterious effects from it, and therefore it will be best to give it in this way.

A slight purging, attended with a gentle moisture on the skin, not unfrequently arises towards the close of this fever, and now and then assists in carrying it off; but where it does not seem to produce a critical effect, it ought to be stopped as quickly as possible by astringents.†

When we succeed in removing the symptoms entirely, by the means which have been pointed out, or in procuring a cessation of the fever, we are to endeavour to prevent its return by a free use of Peruvian bark, the cortex angusturæ, infusions of gentian and orange-peel, and other stomachic tonics; and in order to recruit the strength, the patient should be directed to use a nourishing diet, with wine in moderation; and he should take such gentle exercise as his state of convalescence will admit.

Having pointed out the mode of treatment to be adopted when the disease actually takes place, it seems proper likewise to mention the precautions it may be necessary to pursue, in order to prevent its contagion from being communicated to others.

When the disease arises, the sick ought to be removed to the most remote part of the house, and as much separated from the rest of the family as possible; his bed-linen should be changed frequently; his body be kept clean; whatever comes from him, be immediately removed and emptied; his chamber be well ventilated, by allowing a free admission of fresh air into it; it may likewise be sprinkled frequently with warm vinegar, in which some of the aromatic herbs have been infused. None but the necessary attendants should have any communication with the sick, and these, to guard against contagion, should avoid sitting down on the patient's bed; and they must likewise carefully avoid inhaling the vapour arising immediately from his body. When near him, they may keep a sponge or handkerchief, moistened in camphorated spirits or vinegar, to the nose and mouth.

In hospitals, camps, and on board of ships, where a number are unavoidably crowded together, so as to render it impossible to cut off the communication between the healthy and the diseased, these simple means will not prove sufficiently powerful for destroying the contagion,

* ℞. Aq. Ammon. Acet. ℥iij.
—— Cinnam. ℥j.
Tinct. Opii gutt. xl.
Syrup. Zingib. ℥ij. M.
ft. Hauftus.

† ℞. Elect. Catechu ℥j.
Aq. Cinnam.
—— Pimento āā ℥jſs.
—— Fontan. ℥ij.
Tinct. e Kino ℥ij.
—— Opii gutt. L. M.
ft. Miſtura cujus ſumat Cochl. ij. magna 4tis horis.

and therefore others must be adopted. In all such instances, besides well fumigating the apartments, clothes, beds, bedding, and hammocks, of the sick, as hereafter advised, changing them frequently for fresh ones, paying the strictest attention to cleanliness in every respect, well ventilating every place where they are lodged by a constant and free admission of fresh air, we should oblige those in health, as well as those tainted by the contagion, to undergo daily ablution with cold water.

Nitrous acid has been used by Dr. Carmichael Smyth as a fumigation, with the greatest success in this fever. In the year 1780, the disease broke out among the Spanish prisoners confined in Winchester castle; he embraced the opportunity of giving the remedy a fair trial, and obtained the most decisive evidence of its happy power in preventing the spreading or farther communication of the infection. He found he could use it without risk or inconvenience to respiration, and therefore thought it the most proper antidote to be applied, where persons are unavoidably obliged to be present.

At the suggestion of Dr. Smyth, important experiments were made, by desire of the Lords of the Admiralty, with the nitrous acid vapour, on board the Union hospital-ship, in November, 1795, to correct the contagion of a very malignant fever which had made great ravages among the crews of the Russian ships at Sheerness; the success of which was so complete, as not to leave the least reason to doubt of the high efficacy of this fumigation. Many subsequent trials have confirmed this opinion, and have induced the House of Commons to vote a reward to Dr. Smyth for his valuable and easy method of destroying the contagion of infectious fevers.

The Doctor's mode of obtaining nitrous acid is by decomposing nitre by means of heated sulphuric acid, which may be done as follows: Put half an ounce of this acid into a crucible, glass, china cup or saucer, and warm this over a lamp, or in heated sand, adding to it, from time to time, some nitre: these vessels he directs to be placed at 20 or 30 feet distance from each other, according to the height of the ceiling, and the virulence of the contagion. In hospitals and prisons, he advises the lamps or vessels containing heated sand to be placed on the floor; but on board of ships, he recommends to hang them to the beams by waxed silk cords.

From the well-known efficacy of the sulphuric acid in destroying contagion, he advises it to be employed as a fumigation for clothes and furniture, &c.; but for purifying empty prisons, hospital wards, and ships, he gives the preference to the nitrous, its vapour being more volatile and penetrating, and not leaving the disagreeable smell which the sulphuric does, and thinking it at the same time equally efficacious.

Monsieur Guyton Morveau, in his Treatise on the Means of purifying infected Air, claims the merit of being the discoverer of the power of the mineral acids to destroy contagion, and endeavours to establish the superiority of the muriatic acid over all others. Upon a full investigation of the matter it appears, however, that the power of the mineral acids to destroy contagion was known to Sir John Pringle as early as the year

1750, and their utility for that purpose was mentioned by Dr. Johnstone in his pamphlet published in 1758, in which we are told that the vapour of muriatic acid was successfully employed by him in correcting the contagion of a very malignant fever, which had raged at Kidderminster two years before that period.

Dr. Smyth has also claimed the having been the first who used the mineral acid gases in the apartments of the sick, and has alleged that they never had been employed by Dr. Johnstone, but in places where no one was present, or whence the sick were removed. This opinion has been refuted by Dr. Johnstone's son, and the invention of his father most incontestably established.* What Dr. Smyth seems therefore entitled to is the merit of having brought the discovery into public notice, and of having applied and extended it to general use.

It seems of little consequence whether we employ the nitrous acid or the muriatic in the form of gas for the purpose of destroying contagion and purifying infected air, as the powers of both are extensive and certain. The muriatic is however thought to be more diffusible than the other. When we give it the preference, it may be used in the following manner: Put one pound of common salt into an earthen vessel, and pour over it from time to time a small quantity of sulphuric acid, till the whole salt is moistened. If the air is foul and peculiarly offensive, apply a gentle heat under the vessel, to extricate a larger quantity of vapour; but in general, the simple addition of the acid to the salt will be found sufficient, unless the apartment is very large.

On the appearance of any infectious disorder in a gaol, hospital, workhouse, garrison, transport-ship, or any other place where many persons are crowded together, we should not fail to advise one of these gaseous fumigations in every room, in addition to a free ventilation and the greatest cleanliness. The same steps should be adopted in academies, boarding schools, and even our dwelling-houses.

Other methods of annihilating contagion are noticed under the heads of Dysentery and the Plague.

Of the YELLOW FEVER, or TYPHUS ICTERODES.

FORTUNATE has it been for the inhabitants of this country, that the disease I am now to treat of, has never been introduced among them, notwithstanding their great intercourse with America and the West Indies, in which places it has spread universal terror and desolation, and in its fatality has equalled, if not exceeded, the plague itself, to which malady it indeed bears a strong similarity in many of its symptoms. Possibly the North of Europe may not be susceptible of its contagion.

With respect to the origin of the yellow fever there has prevailed a great difference of opinion; some supposing it to have been introduced into America from the West Indies; and others, that it took its rise from the exposure of putrid animal and vegetable substances on the public wharfs of the city of Philadelphia; which opinion is firmly sup-

* See Dr. John Johnstone's Reply to Dr. Smyth.

ported by Dr. Rush, as he found that the streets adjoining to these wharfs were the first in which the disease made its appearance, and that in several instances it could clearly be traced from thence to other parts of the city. Let this be as it may, it is evident, from the report of Dr. Chisholme, and others, who have written on the disease, that the fever which prevailed in Philadelphia, was exactly the same with that which raged in the West India colonies.

Dr. Clarke informs us, that there appears to have been such an extensive and very peculiar deranged state of the atmosphere in the towns of the West Indies and in North America, that it is more probable the disease was produced by this general cause breaking out nearly at the same time in these different places, than that it was carried from the one to the other, either by persons or in any kind of goods or merchandise.

We are informed by Dr. Miller, of New-York, that the yellow fever in America always begins in the lowest part of a populous mercantile town near the water, and continues there without much affecting the higher parts. It rages most where large quantities of new ground have been made by banking out the rivers, for the purpose of constructing wharfs. The appearance and prevalence of the yellow fever in high situations, have led to the belief, he tells us, that the disease was imported by ships from the West Indies. But a person seized with this fever in an affected part of the town, and conveyed to one that is healthy, or carried into the country, does not communicate it, he asserts, to the neighbourhood, nor to those immediately around him. He therefore is of opinion that the yellow fever is generated by the impure air or vapour which issues from the new-made earth or ground raised on the muddy and filthy bottom of rivers, and which deteriorates the air above it, in like manner as air becomes offensive and injurious when it approaches or passes over a body of vegetable or animal matter in a state of putrefaction.

It appears that the shores of the rivers of New-York and Philadelphia have undergone great and rapid alterations from their natural state within a few years, on account of the vast increase of commerce, and for the sake of making wharfs; and Dr. Miller mentions, it is only in such parts where these alterations have taken place, that the yellow fever has been produced. The parts where little or no alteration has taken place on the East and North river, and which continue nearly in their natural state, do not produce the yellow fever. He adds, eighty new wharfs have been made since the war, the consequence of which has been, that great quantities of filth and corruptible matter, deposited in the muddy bottom of the river, contiguous to the shore, and which produced no ill effect while exposed to the air and washed twice every four-and-twenty hours, have been covered over several feet deep with new earth, and closely pent up so as to exclude the tide. It is in these places, and these only, that the yellow fever is produced, we are told.

Some have imagined, that the fever, which has within these few years occasioned such havoc and devastation, is totally of a different nature from the yellow fever formerly met with in the West Indies and other tropical climates; but in my opinion, it seems to be the same.

and that its only difference consists in its having prevailed as an epidemic, from the subsisting vitiated state of the atmosphere, and from its having, from other concurring circumstances, acquired a degree of malignancy and virulence unknown before.

During a residence of nine years in the West-Indies, from 1776 to 1785, I had frequent opportunities of meeting with the yellow fever among seamen and such new-comers as were imprudent on their first arrival; and although the disease never prevailed during that period as an epidemic, still I always looked on it as highly contagious, and never failed to recommend the adoption of proper precautions to prevent its spreading.

It is probable that marsh exhalations, and the effluvia arising from putrid vegetable and animal substances, under a concurring vitiated state of the atmosphere, were the causes which gave rise to this fever, and that it was afterwards kept up by contagion, heightened, by various accidental circumstances, to a pestilential degree of violence. Very hot and sultry weather, with a long drought, will greatly predispose to the prevalence of this fever as an epidemic, in all tropical climates; and it may have a similar effect in America, where the summer months are intensely warm.

Dr. Rush is of opinion that the yellow fever is not contagious in its simple state, and that it spreads exclusively by means of exhalations from putrid matters, which are diffused in the air; and a few other physicians have indeed, entertained the same idea, to the great injury of the societies among whom they lived, by preventing the adoption of proper means for annihilating its contagion. Some facts have, however, been brought forward by Mr. M'Gregor in his Medical Sketches, which appear to me to establish the point very satisfactorily, that this fever may be communicated by contagion.

The persons most liable to be attacked by it in the West India islands, were the Europeans who had lately arrived; and hence it was, that the troops sent out to recruit our armies, and the seamen to strengthen our fleet, fell its earliest victims. Women were observed to be less liable to its attacks than men, and children still less so than these; and the people of colour were by no means so apt to be seized with it as the whites. When the disease did appear among them, it was always much milder, owing most likely to their necessary temperance. Those of a full plethoric habit, and that were intemperate in their mode of living, were much greater sufferers by it than those of a lax fibre, and who were guilty of no irregularity.

There is evidently something peculiar in the constitution of people from a cold country, which renders them more obnoxious to fever in a warm climate than either the natives or those who have been assimilated to it by a long residence. Accordingly we find, that the same exposure to the causes, predisponent and occasional, will produce fever in a stranger, while the native or old inhabitant remains in good health; and the symptoms will be tenfold more urgent in the one than the other, supposing both were attacked. Hence it happens that long residents, and natives in general, are not liable to the yellow fever; but when they are

attacked with the remittent of the country, the symptoms partake more or less of the malignancy of the prevailing epidemic.

The heat of the body of new-comers in the West-Indies has been noticed by Dr. M'Kittrick to be between three and four degrees above that of the temperature of the natives, and to this he ascribes in part the predisposition of new-comers to the yellow fever.

Dr. Pinckard, late a physician to the army in the West Indies, from having observed this fever exhibited such instability, and varied so incessantly in its character, that he could not discover any one symptom to be decidedly diagnostic, has been induced to offer it as his opinion (see Vol. V. of Dr. Rush's Medical Observations of the University of Pennsylvania) that the yellow fever so called is not a distinct or specific disease, but merely an aggravated degree of the common remittent or bilious fever of hot climates, rendered irregular in form, and augmented in malignity, from appearing in subjects unaccustomed to the climate.

The yellow fever usually attacks with lassitude and weariness, chilly fits, listlessness of every thing around, faintness, giddiness, flushing of the face, redness of the eyes, pains in the eyeballs and lower part of the forehead, as likewise in the back, debility and sighing, thirst, and a tendency to coma: the urine is high-coloured, small in quantity, and turbid; the perspiration is irregular, interrupted, and greatly diminished; the saliva is viscid; the tongue is covered over with a dark fur; the bile is secreted in unusual quantities, and thrown into the stomach, from which it is again speedily ejected; and the skin is hot, dry, and hard.

The disease continuing to advance, the eyes become of a deep yellow, the face and breast are tinged with the same hue; an incessant retching and vomiting of frothy bile ensues; great costiveness prevails, and a peculiar delirium arises, which is attended with a permanent dilatation of the pupils of the eyes.

There is hardly ever an evident remission until the fever has entirely gone through its first stage, which is generally in thirty-six or forty-eight hours; when there is often such an abatement of symptoms as to induce the patient to think himself tolerably well; but an early recurrence of the symptoms in an aggravated form, accompanied with extreme debility, soon convinces him of the contrary.

In the last stage of the disease, the greatest debility prevails, and symptoms of universal putrefaction arise; large patches of livid spots are to be observed on different parts, the tongue becomes dry and black, the teeth are incrusted with a dark fur, the breath is highly offensive, the whole body exhibits a livid yellow in many cases, but not in all, hemorrhages break forth from the mouth, ears, and nostrils, dark and fetid stools are discharged, hiccups ensue, the pulse sinks, and death follows very quickly.

These are the usual appearances to be met with; but great irregularities have been observed by different practitioners. Dr. Chisholme mentions, that he often found patients, without any previous complaint, suddenly become giddy, lose their sight, fall down almost insensible, and remain in that state for half an hour or upwards; the body then became overspread with cold sweat, and this was succeeded by intense

heat, a quick, small, hard pulse, violent pain of the head, particularly in the forehead, great anxiety about the præcordia; the eyes were much inflamed, watery, protruded, and wildly rolling; the face was much flushed; there was great heat at the pit of the stomach, with nausea, frequent retching and vomiting, as also severe pains in the small of the back and calves of the legs.

During 12, 18, 24, or 36 hours, he found all these symptoms continue to increase, except the quickness and hardness of the pulse, which were not materially changed, and that they were then succeeded by general coldness, clammy sweats, and a greater or less degree of coma or delirium. Life, in this case, was lengthened out to sixty or ninety hours from the attack. A short interval of reason perhaps took place, the patient considered himself better, and flattered himself for the moment with the hope of recovery; but a fit, as sudden and as unexpected as the first, came on, during which he rolled his eyes dreadfully, foamed at the mouth, and threw out and pulled back his extremities in violent and quick alternate succession. Dr. Chisholme observes, that, in general, the patient expired in this fit; but, a few instances, he recovered from it, and continued rational for a short time, when another has ensued and carried him off.

He noticed, that, in a few instances, the patient complained of violent pains in the testicles, and, on examination, he perceived them much lessened in size and retracted, with an excoriation of the scrotum: now and then he found a remarkable change in the voice, and that it became weak and shrill; in a few instances he could discover little or no yellowness of the skin.

Dr. Rush says, the disease appeared with different symptoms in different people: be observed the premonitory signs of it were, costiveness, a dull pain in the right side, defect of appetite, flatulency, perverted taste, heat in the stomach, giddiness or pain in the head, a dull, watery, brilliant yellow or red eye, dim and imperfect vision, a hoarseness or slight sore throat, low spirits, a disposition to sweat at nights or after moderate exercise, or a sudden suppression of night sweats. More or less of these symptoms frequently continued for two or three days before the patients were confined, and in some they continued during the whole time of the prevalence of the fever in the city of Philadelphia, without producing the disease. Many went to bed in good health, and awoke in the night with a chilly fit; many rose in the morning after natural and regular sleep, and were seized at their work, or after a walk, with a sudden and unexpected attack.

He observes, that it frequently came on with a weak pulse, and often without any preternatural frequency or quickness; and that, in some instances, it was so low as not to be perceived without pressing hard on the artery; in some cases, the pulse intermitted, and these intermissions occurred in several persons who were infected, but who were not confined by fever; in others there was a more than ordinary slowness of the pulse, which was now and then accompanied with a dilated pupil of the eye. Hemorrhages happened at the commencement of the disorder, chiefly of the nose and uterus; and

as it advanced, the discharge of blood became more universal, and then issued from the gums, ears, stomach, bowels, and urinary passage.

Many complained of a dull pain in the region of the liver, but few felt any soreness to the touch, or pain at the pit of the stomach: in some a determination of blood took place to the lungs, but the brain was chiefly affected with morbid congestion, which was indicated by the suffusion of blood in the face, redness of the eyes, dilatation of the pupils, pain in the head, hemorrhages from the nose and ears, by sickness or vomiting, and by an almost universal costive state of the bowels.

With respect to the secretions and excretions, there appeared to be a preternatural secretion of bile, which was discharged from the stomach and bowels in large quantities, and of very different qualities and colours, being in some cases yellow and in others black. The urine was sometimes plentiful and of a high colour; sometimes it was pale, and at others it was small in quantity and turbid; moreover, sweats of a yellow colour, and highly offensive to the smell, often broke out. On the first and second day, the tongue was invariably moist and white; but as the disease advanced, it became red, and put on a smooth shining appearance; towards the close, a dry black streak appeared in its middle, which gradually extended to every part of it.

The effects produced on the nervous system were different, according as the fever affected the brain, the muscles, the nerves, or the mind. In a few instances, apoplexy was induced, which usually proved fatal; tremors of the limbs and twitchings of the tendons were common; delirium was a frequent symptom, but many passed through the disease without the least derangement of ideas: in some cases, the pain in the head was acute and distressing, and the stomach, towards the close, was affected with a burning or spasmodic pain of the most severe nature.

The senses and appetites exhibited several marks of the ravages of this fever upon the body. Deafness and dimness of sight sometimes took place. Thirst, and want of appetite, were present, as in most other fevers. The convalescence was marked by a sudden renewal of the propensity to venery.* Swellings in the inguinal and parotid glands took place in a few instances, which did not proceed to suppuration. In some cases, the skin was preternaturally warm; in others, it was cooler than in health. The yellow colour was by no means universal; when it took place, it was seldom to be observed before the third day, but more frequently about the fifth or seventh from the first attack. The eyes seldom escaped a yellow tinge. There were eruptions of various kinds on the skin, and, in the latter stage, petechiæ were common; carbuncles also took place in some.

The disease ended in death in various ways. In some, it was sudden; in others, it came on gradually. The last hours of some were marked with great pain and strong convulsions; but, in many, death seemed to insinuate itself into the system with all the gentleness of natural sleep.

* The same is frequently noticed on recovering from the plague.

In every case that came under Dr. Rush's care, there were evident remissions or intermissions of the fever, or of such symptoms as were substituted for it. The disease continued for 15, 20, or 30 days in some people. He observed that all were affected by it; but persons in the prime of life were most liable to it. Men were more subject to its attacks than women. He likewise observed, that the refugees from the West Indies universally escaped it; whereas the natives of France, who were settled in the city of Philadelphia, were much annoyed by it; and he found that the people of colour took the disease in common with the white people, but in them it was usually much milder.

Critical days were hardly ever distinguishable in this fever, nor was the crisis often very evident. Sometimes a copious perspiration put an end to it; and at others, the return of sleep, an hemorrhage from the nose, or sudden diarrhœa, carried it off.

Dr. Fordyce is of opinion* that typhus icterodes ought to be regarded rather as an irregular semi-tertian than as a continued fever; for it often happens, that a patient becomes greatly relieved, and appears to be recovering, when all at once a fresh attack takes place and carries him off. He thinks that the dark brown colour of the skin in this fever arises rather from a greater secretion of the matter secreted by the sebaceous glands of the skin, than owing to a quantity of bile getting into the blood-vessels. In support of this opinion, he observes, that the colour is very different from that which takes place in jaundice. The evacuations from the intestines have not that clay-like appearance which is common in jaundice. The secretion from the kidneys has not that dark yellowish brown, nor that thick sediment, which have almost always been noticed in those persons in whom bile has got into the blood-vessels.

The dark brown matter which the patient throws up by vomiting, he thinks, has the appearance of the matter observed upon the tongue in very violent fevers, and that probably it is formed on the surface of the stomach, and perhaps of the duodenum, or even on the beginning of the jejunum. The force of the exertions in vomiting, often occasions a greater quantity of bile to be secreted, and so to be thrown back into the stomach, and be brought up with the dark brown matter. When this happens, it gives to the matter thrown up, he observes, the taste and appearance of bile. At other times, however, there is no appearance of bile at all, but only of this dark brown matter.

Concerning the nature of the black vomit, various opinions have been entertained. Some have considered it as consisting of putrid bile, some as composed of a mixture of blood and bile, some of the villous coat of the stomach dissolved in the progress of inflammation, terminating in sphacelus, and others, of bile mixed with the septic acid contained in the alimentary canal; but Dr. Cathrall of Philadelphia† considers all

* See his Fourth Dissertation on Fever.

† See the New-York Repository of 1800, for his Memoir on the Analysis of the black Vomit, ejected in the last stage of this fever.

these opinions as erroneous, and offers it as his, that the black vomit is an altered secretion from the liver. We are informed by him, that the black vomit, or matter so called, appears to be of two kinds: one consisting of a number of flaky particles, resembling the grounds of coffee; the other, of a dark coloured inspissated mucus. From various and repeated experiments, he concludes, that the black vomit, besides a considerable proportion of water tinctured with resinous and mucilaginous substances, contains a predominent acid, which is neither the carbonic, phosphoric, nor sulphuric, but hints it may be the muriatic.

It appears from Dr. Cathrall's experiments, that the black vomit, when applied to the most sensible parts of the body, produced little or no effect. It likewise appears that large quantities of this fluid may pass through the stomach and bowels of quadrupeds and other animals, without apparently disturbing digestion or affecting the health. This fact incontestably proves the inactivity of this fluid, and renders it probable that the speedy death which ensues after this discharge in yellow fever, is not from any destructive effect of this matter on the stomach and bowels, but most likely from the great degree of direct and indirect debility, which had been previously induced. Another fact which has been proved by this gentleman's experiments is, that an atmosphere highly impregnated with the odour of the black vomit recently obtained, would not produce fever, apparently under the most favourable circumstances.

In forming an opinion as to the event of the yellow fever, we must have in view the nature of the symptoms, the mode of the attack, and the age and habit of the patient. Youth and a plethoric state, are invariably circumstances of danger. A sudden oppression of all the functions at once; great debility; weak irregular pulse; sighing; severe vomiting of dark matter; tremors of the body when moved, with a tendency to faint on the slightest exertion; pensive sadness in the countenance; and a dilatation of the pupils of the eyes, with coma; are signs of great danger. Black and fetid discharges by urine and stool, the breath being highly offensive, and the appearance of petechiæ, portend almost certain death.

The symptoms that we may regard as favourable are, a settled state of the stomach, lessened head-ach, eyes lively, appearance of an eruption on the skin, known in tropical climates by the name of prickly heat, free perspiration, copious and high-coloured urine, bilious flux, and sound sleep. No disease, however, exhibits a greater variety of symptoms, and often less to be depended upon, than this; for sometimes it goes on with favourable appearances, then suddenly changes to the worst, and sometimes patients apparently almost in a state of convalescence, expire in a few hours.

Dissections of the bodies of those who have died of the yellow fever have shewn the coats of the œsophagus corroded; the stomach and intestines loaded with a black fetid matter, or both to be often much inflated, inflamed, and sphacelated; the liver, in many cases, to be shrunk to less than half its natural size, very flaccid, and of a colour approaching to buff; and the gall-bladder to be flaccid and greyish, having but

little bile contained in it. In some instances, the lungs have been found inflamed; and the bladder has been observed to be much thickened, and to contain a considerable quantity of urine. In those cases where there has been a discharge by vomiting of a black coagulated matter resembling the grounds of coffee, the gall-bladder and biliary ducts have been found distended with the like substance.

The same difference of opinion which arose among the professional gentlemen of Philadelphia, with regard to the origin of the disease, seems likewise to have subsisted between them, as to the mode of treatment to be pursued; some recommending and adopting the antiphlogistic plan, by bleeding, purging, and a low diet; some, the stimulant plan, with a liberal use of the bark, wine, opium, and the cold affusion; and others, again, either purged moderately with calomel, or bled on the first or second day of the fever, and then resorted to a free use of bark, wine, laudanum, and aromatic tonics, and this practice they adopted on the supposition that the disease was inflammatory in its first stage, and putrid in its last.

According to the report of Dr. Rush, this last mode of treatment was scarcely more successful than the tonic and stimulant one; and that which he found to succeed best was the antiphlogistic, pursued even to a degree of extreme rigour; for we are given to understand, that although in some instances he allows of one or two moderate bleedings being sufficient, still, in most cases, he was in the habit of repeating the operation much oftener, and of drawing off a considerable quantity each time, even from the poor who resorted to his house for advice.

Whether or not bleeding may be practised with advantage to the patient in America, or to what length it may be carried, I am not capable of determining, never having been in that country; but being well acquainted with the climate of the West Indies, from a long residence there, and having often met with the disease (although not under its present malignant form,) I must concur with the objectors, who contend, that bleeding cannot there be resorted to with advantage. If ever it is advisable, it can only be where the fever has made its attack on a newly arrived European of a full plethoric habit and vigorous constitution, and on the very first appearance of indisposition.

Even here it is probable that it may be more likely to do harm than good. By the communications of Dr. M'Larty of Jamaica, inserted in the Medical and Physical Journal,* we are to understand that the principal practitioners of Kingston consider bleeding as a remedy, which in no case of the fever of new-comers is productive of advantage; but in most instances of much evil. The case of a seaman who was bled the same morning that he was taken ill, is reported by this gentleman. The patient was a remarkably stout young man, nineteen years of age, and laboured under a violent head-ach, flushings in the face, redness of the eyes, and general uneasiness. A vein was opened in the arm while sitting; but no sooner had he lost three or four ounces of blood, than surprising syncope compelled him to lie down. In this posture, when

* See Vol. ix. page 37.

about eight ounces more were taken away, he became so extremely languid as to make it advisable to tie up the arm. He never again got up; from that moment he continued feeble, and debility advanced progressively in spite of every thing given to obviate it, till the third day, when he died. It seemed, indeed, as if the powers of life had been so exhausted by the loss of blood, as to be incapable of being again roused into action.

Dr. Clarke, in his treatise on this disease, mentions, that no native recovered when the lancet had been used, and Dr. Chisholme observes, that although the blood drawn, in the cases where this remedy was employed, appeared remarkably florid, and always threw up an inflammatory crust of greater or less thickness, and although the pains seemed to undergo a temporary mitigation, yet the consequence, at the expiration of a few hours, was always fatal, notwithstanding the patients were remarkably robust, florid, and generally in the vigour of life.

These observations fully justify the remarks which I thought it necessary to make under the head of Typhus Gravior, and which I beg leave again to repeat, viz. that the contagion certainly weakens the force of the solids; for which reason, whenever we suspect a fever to have arisen from this cause, we should proceed with the greatest caution in drawing off blood, even although the symptoms may run high at the beginning, and may seem actually to demand the taking away a considerable quantity.

Dr. Hector M'Lean, who has likewise published on this fever, is one of the few West India practitioners who approves of bleeding. He observes, that the determinations to particular organs, which take place in the disease, and which constitute its greatest danger; the marks of inflammation, which dissections have shewn in the stomach and biliary organs, evidently point out the propriety of this evacuation. He adds, that experience confirmed its utility; for this practice was much more successful, after he had adopted blood-letting, than before. By way of caution he mentions, however, that it is only in the very early stages he thinks it advisable to have recourse to the operation, and that if it is not performed as early as the second, or at farthest the third day, he apprehends it will not be successful.

Dr. Jackson, in his Exposition of affusing cold water in the cure of Fever, tells us, that he holds a subtraction of blood in large quantity to be a most decisive process in the more intense and concentrated forms of the endemic fever of the West Indies, and that the remedy produces a condition, susceptible of being more readily acted upon afterwards by cold affusion, and the other means we may employ. He adds, that whatever may be the precise quantity necessary to produce the effect, it must always be supposed to stand high, and seldom lower than thirty ounces; in strong athletic European soldiers, recently transported to a tropical climate, sometimes far above it.

To obviate the inflammatory diathesis which prevails during the first stage of the disease, and to take off the determination from the head, as well as to cleanse the primæ viæ of acrid and offending humours, we may employ gentle purging with a good effect; but as the stomach

is seldom in such a state as to be capable of retaining those purgatives which are in common use, besides a triple dose being generally necessary to produce sufficient evacuations, it has been found best to administer calomel, either by itself or combined with jalap, as below,* which may be repeated every four or six hours, until a proper effect is produced.

In no stage of typhus icterodes can emetics or antimonials be administered with safety, owing to the irritable state of the stomach which usually prevails.

Mercury being known to be a kind of specific in local inflammations of the liver, and there being evidently a great determination of blood to this viscus in the yellow fever, practitioners have been induced to employ it likewise with the view of exciting a degree of salivation; and where an incessant vomiting has prevented their using calomel in sufficient doses to effect this, they have substituted mercurial frictions. In some of the cases where calomel was administered with this view, its quantity was obliged to be increased to an almost incredible extent. Dr. Chisholme mentions a case, where 400 grains were given before the salivary glands were effected; and in the Medical Commentaries for the year 1795, Dr. Duncan, of Edinburgh, takes notice, that a correspondent in Jamaica had reported an instance where, within the space of a few days the patient had taken 270 grains of calomel, and had rubbed in twenty drachms of the strongest mercurial ointment, from which the happiest effects were at last produced.

On such authorities, and from the well known efficacy of mercury in inflammations of the liver, it may, probably, be a proper and valuable remedy in typhus icterodes. To ensure its success, it should, however, be employed at the very commencement of the disease, and be so conducted as to affect the mouth before the dangerous symptoms of the second stage of the fever make their appearance. Dr. Currie of Philadelphia informs us † that in every case in which he has seen mercury employed after the distressing and dangerous symptoms of the second stage had come on, it aggravated them and increased the danger; and that when resorted to after signs of what is called putrescency have made their appearance, it has invariably accelerated the fatal event, notwithstanding the declaration of Dr. Chisholme to the contrary.

These restrictions apply, however, only to the internal use of mercury: for it may be employed externally at any period of the disease, so long as the extremities continue warm, and the absorbents preserve their power. In having recourse to mercury, we may direct half a drachm, or even a drachm of the strongest ointment to be rubbed into the thighs, hams, legs, and arms, every four hours, and we may give

† See vol. ix. page 102, of the Med. and Phys. Journal.

* ℞. Calomel. gr. iv.
Pulv. Jalap. gr. viij.—xvj.
Syrup. Zingib. q. s. M. ft. Massa
in Pilulas iij. pro dos. dividenda.

calomel internally, either by itself, or combined with opium,* according to the state of the bowels. When a gentle ptyalism takes place, its use ought immediately to be omitted, and only nourishment and wine be given, as all danger is then supposed to be over, and the recovery of the patient to be almost certain.

As the safety of the person in typhus icterodes is said thus to depend on the being able to excite a gentle spitting at an early period, and as large doses of calomel, even assisted by inunction with mercurial ointment, have sometimes failed to produce this desirable effect until after a lapse of several days, query, might it not be advisable in desperate cases, where we wish to excite a rapid ptyalism, to give a solution of muriated quicksilver in the manner noticed under the head of Hydrophobia and Gonorrhœa?

That many more patients have recovered by a mercurial treatment, if early adopted, than by bleeding, or any other mode, appears from Dr. Chisholme's excellent work, as well as from the practice of the naval and military hospitals in the different West India islands, and the reports given in by various private practitioners. In typhus icterodes, possibly, there may be congestions in the liver, both from an accumulated and imperfect secretion of bile; and mercury certainly possesses very stimulating and deobstruent qualities.

At the first commencement of this fever, it is not unusual for a nausea and frequent vomiting to prevail. In such cases, it may be advisable to wash out the stomach with an infusion of chamomile-flowers; but should they continue throughout its progress, so as to prevent both food and medicine from being retained, stupes wrung in a decoction of bruised poppy-heads, with an addition of one third part of camphorated spirits, may be kept constantly applied to the region of the stomach, and the saline medicine may be administered so as that the effervescence shall take place in the stomach, with an addition of about ten or twelve drops of tinctura opii to each dose.

Warm clysters made of mucilaginous and aromatic vegetables infused in boiling water, with an addition of sixty or eighty drops of the tincture of opium, have been attended with the most immediate and sensible benefit in cases where vomiting, oppression about the precordia, and great irritability appeared to be owing to exhaustion from too copious depletion.

Dr. Currie mentions, in the communication before alluded to, that in cases of black vomiting, more relief has been obtained by giving from one to four table-spoonfuls of an equal quantity of lime-water and new milk mixed together, every hour, or oftener, than by any other remedy, when employed on the first appearance of that symptom.

In cases of great irritability of the stomach, where excessive vomiting prevails, the early application of a blister immediately over the part

* ℞. Calomel gr ij.—iv.
Opii gr. ſs.
Conſerv. Roſæ q. s. M.
ft. Pilula pro dos. 4ta hora repetenda.

may be attended with the best effect; but this remedy is in general applied too late, and a determination to that important organ is suffered to take place before any attempt is made to counteract it, which at last proves too powerful to be removed.

In some instances, the vomiting has been known to cease upon the application of a large poultice of mustard-flour to the stomach and feet, which occasioned a very extensive and painful inflammation of the skin.

By employing cold affusion on the first onset of typhus icterodes, we may, probably, in some instances, arrest its progress, and interrupt the morbid actions, and even in cases of some days continuance we shall be able, by means of it, to abstract heat, induce sleep, and recruit the animal powers. In an advanced stage, it will be best to substitute aspersion, or ablution with a wet sponge. In all cases where there may be the smallest danger of arresting the movements of life by either affusion or aspersion, a glass of wine, or some other more powerful cordial, should be taken immediately after using the remedy.

Dr. M'Lean has seen the best effects to arise from cold affusion in this fever, and tells us, in order to heighten its power, that he often premised the warm bath, and while the patient was sitting in it, he dashed two or three buckets of cold water suddenly on him. In those cases where the remedy was happily applied, the general effects observed from it were, an improved recollection, greater cheerfulness of aspect, a diminution of heat and anxiety, the pulse becoming more full and equable, a tendency to sleep, and sometimes a distinct remission.

Some communications of Dr. O'Leary's, through the medium of the London Medical Journal,* further establish the good effects of the affusion of cold water in typhus icterodes. We are told by him, that he was ordered, soon after his arrival at Barbadoes, from Europe, to attend the sick of the 70th regiment at Antigua, where on his arrival he found they amounted to about an hundred. They were chiefly affected with the yellow fever, and the mortality had been very great; but on his employing cold affusion judiciously, agreeable to the rules advised by Dr. Currie (see Typhus Mitior and Gravior,) very few died afterwards. He mentions, that so sensible were the men of its efficacy being superior to any other remedy, and of the relief obtained from it, that in his absence they frequently entreated the officers, where duty led them to visit the hospital, to have it repeated on them.

In a short history of the yellow fever which prevailed at Norfolk in America, and communicated by Drs. Selden and Whitehead to Dr. Miller of New-York,† further testimony in favour of an early use of the cold affusion is produced. From the great benefit which these physicians experienced in their two or three first trials of it, they proceeded to recommend it afterwards with confidence. They have reported, that of all those patients to whom they had an opportunity of exhibiting this remedy, on or before the second day of the attack, they

* See vol. xvi. page 490.

† See vol. x. page 266, Med. and Phys. Journal.

had the good fortune not to lose one; but after this period, when the fever had begun to subside, without symptoms of amendment, the affusion of cold water seemed to hasten the fatal catastrophe. In no instance did they employ the remedy in question without the exhibition of calomel at the same time. No disagreeable effect was produced by combining the use of calomel with the affusion of cold water; nor did the mercury occasion a salivation in a single instance, although the discharge from the bowels was scarcely as great as when it was used alone in the cure of the disease.

In temperate and cold climates where we employ affusion, it will be sufficient to take the water fresh from the spring, pump, or the sea; but in warm climates, in order to command the full and expected effect, it will be necessary that its temperature be reduced to a low degree (as about 40 of Fahrenheit's thermometer) by exposing it to the night air previously, or by adding some salt to it.

For reducing the temperature of the body to its natural and healthy standard, and for producing a refrigerant effect in this and other fevers of the typhoid type, we have been informed by Dr. Cumming* that he has derived the highest benefits from either sprinkling or sponging the bodies of the sick with ardent spirits, or alcohol, and that he considers these to be in every respect superior to cold water. The effect, no doubt, will be quicker from using spirit, as the evaporation will be more rapid; but it has been questioned, and very properly, whether or not the great advantages which are derived from the cold affusion or washings, are to be attributed solely to the abstraction of heat in fever.

Should proper means not have been adopted sufficiently early, or should they have failed in procuring the desired effect, and symptoms of putrefaction have made their appearance, our endeavours must be directed towards stopping the putrid disposition of the fluids, by the most powerful antiseptics. West India practitioners have of late administered the capsicum, in the form of pills, as a stimulant, and with a very good effect. Spirituous baths have likewise been employed. The Peruvian bark must be given in as large doses as the stomach will bear; and if it will not retain any quantity, either in substance, decoction, or infusion, it may then be given in the form of a clyster. A pint of decoction, made by boiling an ounce of the powder in a quart of water, until one half is evaporated, may be injected every three or four hours. Acid fruits may likewise be given liberally, and the ordinary drink should be wine, sufficiently diluted with water, and acidulated with lemon or orange juice.

The mineral acids might likewise be serviceable in this fever, as well as in typhus gravior and scarlatina anginosa, and I much wish that a fair trial may be made of them, but more particularly the muriatic, in an early stage of the disease. The sooner it is administered, the more likely will it be to prove efficacious. Its wonderful effects in other malignant disorders I have often witnessed; and typhus icterodes being

* See Med. and Phys. Journal, vol. xviii. p 197.

evidently of this nature, is it not reasonable to suppose that its use might prove highly serviceable in this also?

Throughout the whole course of the disease, but more particularly under the above circumstances, the strictest attention ought to be paid to cleanliness, by not only changing the patient's linen frequently, and immediately removing and emptying whatever comes from him, but likewise by sprinkling his chamber every now and then with warm vinegar, and allowing a perfect and free ventilation of air through it. To destroy contagion, and assist in correcting the fetor, the gaseous fumigations recommended under the head of Typhus Gravior ought to be employed.

The patient's strength is to be supported throughout the disease with preparations of barley, sago, tapioca, Indian arrow-root, &c. mixed with wine.

Dr. M'Lean observes, that he always found opium to be injurious in the beginning of this fever, although restless nights and anxiety often tempted him to prescribe it in large doses. It procured no settled rest; for a time, the delirium was increased, to which stupor rather than sleep succeeded; and the next day, languor, irritability, and weakness, prevailed. When remissions had commenced, and where a return was apprehended, he gave opium freely, and apparently with a good effect. It was likewise useful when convulsions took place, and to procure sleep towards the decline of the disease.

When a severe head-ach with great depression of spirits is complained of, camphor and æther may probably be administered with some advantage. In cases where violent delirium prevails, the application of a blister to the neck or shoulders may be advisable; but where there is only coma, this remedy will not be necessary.

When remissions are obtained, and the disease shews a disposition to yield, the Peruvian bark may be taken with advantage, and its use should be continued during the whole stage of convalescence, which is often tedious and long, owing to the great debility that is always left behind, and from which the patient cannot readily recover, unless by a change of climate.

Quassia in a cold infusion is a valuable medicine during convalescence; and here the cold bath may also be serviceable.

The Angustura bark has likewise been found a useful medicine towards the close of this fever, when debility is the chief symptom. An infusion of it* sits easy on the stomach, and is attended with the most beneficial effects in restoring the strength and appetite. Other tonics may be used at the same time: for these, see Dyspepsia.

The fever which lately committed such havoc and devastation at Gibraltar and Malaga, appears to have been no other than the typhus icterodes; and of all the calamities with which mankind are afflicted, it

* ℞. Infus. Cort. Anguſt. ℥v.
Tinct. Cinchon.
Columbo. ää ℥ſs. M.
Capiat Cochl. magna ij. ter quaterve in die.

seems the greatest, the plague excepted. As we may justly consider its contagion as one of the most subtile and powerful vapours of the putrid kind, every possible endeavour should be exerted as soon as possible to overcome and destroy it. We are, therefore, to have recourse to the fumigations, and other means, which have been noticed under the head of Typhus Gravior.

Where the disease breaks out in a garrison, the healthy should immediately be separated from the sick, and, if possible, be encamped at a considerable distance. Subjecting the former to cold ablution daily, might possibly enable them to resist the powers of contagion the better.

Having pointed out the most approved method of treating the yellow fever, it seems advisable to offer a few hints, by an attention to which Europeans may often be enabled to withstand its attack, or, if seized, to go through it with the least danger. The plethoric and robust being the subjects most liable to this malignant disease, all such, on their approach to the warm latitudes, ought to be bled in proportion to their strength; but should this have been neglected during the voyage, it may be done immediately on their arrival on shore. It will easily be understood here, that bleeding, as a preparative, will have a very different effect from what it would have in a curative intention; for in the former, it prevents morbid action, and gives time for assimilation; whereas in the latter, it induces debility, and morbid associations, very dangerous to life.

After bleeding, if the patient is of a full and plethoric habit, the bowels are to be opened by some cooling purgative; and if he is naturally of a bilious habit, it may be advisable to premise a gentle emetic. Having adopted these steps, he may then begin a slight course of mercury, taking from two to four grains of calomel, according to his age and other circumstances, every other night, either in the form of a pill, or that of a powder mixed in some thick vehicle, until the gums become somewhat affected. Should the medicine run through the bowels, a grain of opium, or a few drops of tinctura opii, may be added to each dose. When the mouth shews the mercurial action, a dose of cooling physic ought to be administered after one or two days intermission of the medicine. In some constitutions, not easily affected by mercury, it will be necessary to persevere with steadiness, until the system be thoroughly impregnated, for thereon depends the safety of the patient.

On the voyage being completed, and his landing, he must observe the greatest temperance in his diet, and carefully guard against any exposure to the sun in the middle of the day, and to the cool air of the night, until he becomes somewhat habituated to the climate. The effects of temperance as a prophylactic are strikingly demonstrated by Dr. Chisholme, who observes, that while the yellow fever raged at the island of Grenada, the utility of this was remarkably illustrated by the almost total exemption of the French inhabitants from the disease, whose mode of living, compared with that of the English, is temperate and regular in an uncommon degree.

Dr Clarke tells us that new settlers, who could be prevailed upon

to undergo a gentle course of mercury, taking a few laxative medicines, afterwards confining themselves to a moderate use of wine, and living chiefly on vegetables and fruits for the first two or three months, may rely almost to a certainty on escaping this fever. The remark is, I think, well founded, excepting that, notwithstanding all these precautions, it may arise from contagion, and in this case its virulence, in all probability, will be greatly diminished.

Such are the means which have been recommended for enabling Europeans to withstand an attack of the yellow fever; and by paying a strict attention to the following precautions, which I offer on my own knowledge of the subject, they possibly may be enabled to enjoy a long and uninterrupted state of good health in warm climates, unassailed by any other disease whatever. Men who exchange their native for a distant climate, may be considered in a light somewhat analogous to that of plants removed into a foreign soil, where the utmost care and attention are required to inure them to their new situation, and keep them healthy.

Every European, in changing his own climate for a warm one, should, if possible, avoid arriving in his new situation during the rainy season of the year. This, with some small variation, commences in the month of August, and terminates in October. If he has it in his power to choose the place of his residence, he ought to prefer that situation which is somewhat elevated, dry, open to the air and sun, and remote from woods, stagnant waters, or marshy grounds. Most of the towns in the West Indies, as likewise the factories on the coast of Africa, with some of our settlements in the East Indies, are, for the convenience of trade, situated on low grounds, either contiguous to the sea, or on the banks of some large river. Swamps and marshes therefore exist in their neighbourhood, and when acted upon by a powerful sun, particularly after heavy rains, they send forth noxious vapours and exhalations, which prove a never-failing source of intermittent and remittent fevers, fluxes, &c. to all descriptions of inhabitants, but more particularly to Europeans lately arrived.

Persons of this description ought therefore to pass as little of their time as possible in such a situation, and, where obliged by business to resort there by day, they should retire early in the evening, before the dews begin to fall, to one that is elevated, and that has the advantages before described. If no such situation is to be procured without great inconvenience, sleeping on board a vessel in an open road or healthy harbour, will then be preferable to passing the night on shore. Where unfavourable circumstances do not admit of either of these advantages, and new-comers are obliged to remain constantly in an unhealthy spot, they will act prudently in adopting such means as will tend in some measure to lessen the danger to which they are exposed. The highest apartment in the house should be chosen to sleep in; if furnished with a stove, a small fire should be kept in it; and the windows that front the swampy ground, if the house is to the leeward of this, are to be kept shut, admitting the light and air by the others. Tobacco may be smoked freely, and about half an ounce of the com-

pound tincture of bark be taken every morning on an empty stomach, repeating the dose again in the evening.

The diet of Europeans newly arrived in a warm climate, should consist of a greater proportion of vegetable food than of animal, avoiding such articles of the latter as are either salted, or very highly seasoned. To all such, a free use of ripe sub-acid fruits will be highly proper, as they will not only assuage thirst, but serve to correct any tendency in the fluids to putrefaction.

The unbounded hospitality of the islanders in the West Indies, frequently proves a source of much evil and danger to new-comers; for they are no sooner arrived, than they are engaged by invitation in a daily round of visiting and feasting, committing therein excesses, which, together with an unavoidable exposure to the dews of the evening, are not unfrequently productive of a severe attack of illness. To all new settlers I beg leave, therefore, to recommend a very moderate indulgence in the delicacies of the table; a spare and temperate use of all kinds of vinous and spirituous liquors; a proper self-command in sensual gratifications; the carefully avoiding any exposure to a current of air, or moisture, particularly when the body is heated by exercise; their return early to their respective homes before the night dews begin to fall; and their cautiously obviating a costive habit, by taking from time to time some gentle cooling laxative, until they are able to establish a proper regularity in this point, by visiting the temple of Cloacina at certain hours every day, and soliciting natural evacuations.

The custom of going early to bed, and rising betimes in the morning, is conducive to health every where, but more especially so in hot countries. If gentle exercise, either on foot or horseback, be added in the morning, it will prove highly salutary; and should cold bathing be first used, the body would thereby be much invigorated, and rendered less susceptible of external impressions. Where the convenience of a proper bath is not to be procured, water properly cooled, by having been exposed all night to the air in pots, or a tub, may be thrown over the body. Minor ablutions at other periods in the day, may have a good effect. Dancing is an amusement cautiously to be shunned by Europeans newly arrived.

The dress of such persons should consist of coats made of thin woollen cloth, with waistcoats and breeches of dimity or nankeen. What is worn next to the skin should be made of cotton in preference to linen, as this last, when moistened with perspiration, in consequence of any severe exercise, is very apt to convey a sense of chilliness, when the body becomes inactive again. Calico shirts will therefore be preferable to linen ones. Those who are afflicted with rheumatic pains may substitute a waistcoat of flannel next to the skin. New settlers should observe the greatest precaution in changing their clothes of every kind as soon as possible after getting wet, a circumstance too frequently made light of and neglected, and which often, therefore, proves the cause of an attack of some severe disease.

The rules to be observed for preserving the health of seamen in warm climates, are inserted under the head of Scurvy.

ORDER II.

Of INFLAMMATIONS, or PHLEGMASIÆ.

THE character of this order of diseases is Synocha fever, with inflammation or topical pain; the function of an internal part being at the same time injured; the blood upon venesection exhibiting a buffy surface.

Before I proceed to speak of the different inflammatory diseases to which the human frame is liable, it seems proper to make a few observations on inflammation in general, and likewise to point out the different species of it which are to be met with in practice.

In every inflammation there is an increased action of the blood-vessels, propelling forward a greater quantity of blood than usual into the part affected, by which means its sensibility and irritability are increased, its vessels distended beyond their natural tone, and the circulation of blood through them rendered more rapid.

A variety of opinions have however been entertained with respect to the nature of inflammation. Hoffman, and Dr. Cullen, supposed the proximate cause to consist in an increased action of the blood-vessels, with a spasmodic stricture of their extremities; but as the beginning veins are in a state of over-distention in an inflamed part, as well as the arteries, it is evident that no such spasmodic stricture can exist. Dr. M'Bride's hypothesis on the nature of inflammation is, that, besides the action of the blood-vessels being increased, the resistance to the course of the blood is diminished; and a third doctrine has lately been advanced, which teaches, that instead of an increase of action in the vessels of the part, as is commonly supposed, the direct contrary takes place, and that there is a deficiency of action and paralysis of the vessels affected, instead of spasm. The principal argument in favour of this hypothesis is drawn by its founder, Mr. Latta,* from the swelling of the inflamed part, which he attributes to a partial stagnation of blood; but the great heat of the part, the throbbing pain, and, in many cases, the accelerated action of the whole sanguiferous system, clearly point out an increase of action in the vessels.

When an inflammation is confined to one particular part, without producing any general affection in the system, it is called local or topical; but when it produces effects on the whole system, it is known by the name of general inflammation.

Inflammation is properly of two kinds; viz. the phlegmonous and erysipelatous. By the phlegmonous is to be understood, an inflammatory circumscribed affection of the skin and cellular membrane, with a swelling rather prominent in the centre and of a bright red colour, attended with pain and distention, and in which any effusion that happens to take place, is usually converted into pus. By the erysipelatous is implied an inflammatory affection confined principally to the skin, when

* See his System of Surgery.

seated outwardly, and to the mucous membrane when internally, with hardly any evident swelling, being of a mixed red colour, readily disappearing upon pressure, but quickly returning again, the redness being of no regular circumscription; but spreading unequally, with a pain like to that of burning, which gives rise to a number of small blisters, and terminating usually in a desquamation of the scarf-skin, and now and then in gangrene, but never in a suppuration, unless combined with phlegmon.

Besides these differences in the circumstances of these two kinds of inflammation, there is another very evident one, which is, that a phlegmon, when considerable, is generally accompanied with more or less of the symptoms of general inflammation; whereas erysipelas is usually attended with symptoms of irritation when perfectly pure, from which circumstance it will be necessary to adopt a different mode of treatment in each of them.

Of the erysipelas there are two cases; one, when it is merely an affection of the skin alone with very little of the whole system, which is called erythema; the other, when it is an affection of the system, and is named erysipelas.

Persons in the prime of life and in full health and vigour, and of a plethoric habit of body, are most liable to the attacks of phlegmonous inflammation; whereas those advanced in years, and those of a weak, irritable, and spare habit, are most apt to be attacked with erysipelatous inflammation.

The more moderate the different symptoms, the better is the chance of the inflammation terminating by resolution; when it does not readily yield to proper remedies, and is unusually obstinate or deep-seated, there is reason to believe that it will terminate by suppuration. When the symptoms are very violent, especially if the inflammation is of the erythematic kind, there will be reason to fear gangrene.

Resolution is always a favourable termination; suppuration is also favourable, if the inflammation be external and the habit good, but in internal inflammations we shall find it is generally to be dreaded. Internal gangrene is always fatal. It is only when the gangrene is external that medicine can avail, and then it often fails.

Of PHLEGMON.

THIS species of inflammation is occasioned by the application of stimulants, such as fire or burning; by external injuries, either bruising, wounding, over-stretching, or compressing the parts; by extraneous substances which have lodged, and either by their form, bulk, or quality, produce irritation; by the application of cold; and by any thing that determines an increased impetus of blood to the part.

The chief seat of the phlegmon is the inner surface of the true skin and the cellular substance contiguous to it, from which it extends to the adjoining parts of the cellular membrane and skin; so that the surface soon assumes a florid colour, the tumour at the same time extending both in depth and circumference.

It comes on with an itching, dryness, redness, and increased heat, and circulation in the affected part; which symptoms are shortly succeeded by a circumscribed tumour, through which shooting and throbbing pains extend. If the inflammation runs high, and is of considerable extent, then an increased action of the heart and arteries takes place; the pulse becomes full, hard, and quick; the skin dry and hot; great thirst arises, and a feverish disposition ensues.

A phlegmon usually terminates either by resolution, suppuration, or gangrene. By resolution we are to understand the natural cure or going off of the inflammation by a gradual cessation of all the symptoms, the state and texture of the part remaining entire. By suppuration is implied the conversion into matter or pus of the lymph and blood which have been extravasated in the adjoining cellular substance, in consequence of which a cavity, termed an abscess, is formed. By gangrene is meant the total loss of sensibility, irritability, and circulation in the part, with a state approaching, more or less, to putrefaction in the vessels and muscles, as well as in the effused matter.

Such are the most common terminations of this species of inflammation, but in the schools a fourth has been noticed, which is by a scirrhus, implying an indolent knotty hardness of the part, unattended by any discolouration, but accompanied with lancinating pains, the tumour after a time ulcerating and becoming cancerous. This termination of inflammation is, however, confined to glandular parts.

When the patient is seized with reiterated shiverings; when the fever and inflammatory appearance cease quickly without any perceptible reason; when a heavy, cold and dull uneasiness is experienced in the part affected, instead of acute pain; when the most elevated portion of the tumour appears soft and white, while the rest has its redness increased; and when at the same time the surgeon can feel the fluctuation of a fluid, we may be assured that a termination in suppuration has ensued. The latter symptom, however, occurs only where the matter lies superficially; but a man endued with great nicety of touch may be able, in many cases, to perceive the undulations of matter, even when deeply lodged. In most instances, indeed, of this nature, the quick subsidence of all the inflammatory symptoms, the repeated rigors, and the sense of weight and coldness in the part, are the only obvious appearances; but the patient being afterwards attacked with emaciation, nocturnal sweats, and other hectic signs, very clearly point out that there is a hidden collection of matter.

The symptoms which denote the termination of inflammation in incipient mortification are; first, a sudden diminution of the pain and sympathetic fever: secondly, a livid discolouration of the part, and which, from being yellowish, becomes of a green hue: thirdly, a detachment of the cuticle, under which a turbid fluid is effused: and fourthly, the swelling, tension, and hardness subsiding, while, at the same time, a crepitus is perceived on touching the part, owing to a generation of air in the cellular membrane. The term gangrene has been applied to the disease in this stage; but when the part has become black and fibrous

and destitute of natural heat, sensation, and motion, it is denominated sphacelus.

In phlegmon, our prognostic should be drawn from the symptoms which are present, as well as from the seat of the inflammation. If the inflammatory appearances cease suddenly, and blisters discharging a thin ichorous matter arise, together with the part affected losing its sensibility and becoming of a livid colour, then a gangrene will certainly ensue. On the contrary, a gradual abatement of the inflammatory symptoms by a termination, either in resolution, or a suppuration where proper pus is formed, may be regarded as prognosticating a favourable event. This remark holds good, however, only with respect to external suppurations, as internal ones are always dangerous, and not unfrequently fatal.

In the incipient state of a phlegmon, it will always be proper to attempt the cure by procuring a resolution of the tumour, if possible; and therefore an early attention should be paid to the removal of the cause which has excited it, as likewise to obviate the phlogistic diathesis, either of the whole system or of the particular part which is affected.

If the inflammation has proceeded from a lodgment of some extraneous body, such as a bullet discharged from any kind of fire-arms, or has been occasioned by a thorn or splinter of wood, it ought immediately to be removed, and, if necessary, the wound must be dilated to such a size as to admit of its being readily got at.

In cases of local inflammation, the phlogistic diathesis may be obviated by drawing a proper quantity of blood immediately from the neighbourhood of the part affected, either by scarifications with the aid of cupping-glasses, or by the application of several leeches, which will be the preferable way if they can be procured; promoting the flow of blood by cloths dipped in warm water, and renewed as soon as they cool: but in internal inflammations, it will be advisable to draw blood from the system, by opening a vein or artery, taking care to proportion the quantity drawn off to the age and strength of the patient, as well as to the severity of the symptoms.

With a view of obviating the phlogistic diathesis, we may likewise have recourse to purgative medicines. In inflammations of any of the external parts of the body, as likewise in those of the head and chest, a frequent use of purgatives will be attended with a good effect: but in a similar affection of the bowels, active purgatives should be administered with due caution. Those of a mild nature, together with emollient laxative clysters, deserve a preference.

To assist these means, and terminate the inflammation by resolution, if possible, it will be right to make use of some discutient application, as remedies of this nature are, in some mild cases, of themselves sufficient to disperse an incipient phlegmon. In cases of violent contusion or fracture, where a considerable degree of tension prevails, a poultice of rye-meal or crumbs of bread moistened with the aq. lithargyri acetati composita, properly diluted with water (viz. about 80 drops of the former to about a pint of the latter,) will be a very proper application,

and this may be renewed twice or thrice a day, until the swelling and inflammation subside; but in a common phlegmon, or where the part is so tender and painful as not to be able to bear the weight of a poultice, we must be content to apply pieces of soft linen moistened in some sedative application.* It is to be understood, however, that these remedies are to be applied cold, whether we use poultices or wet pledgets, and that they are to be renewed as often as they become stiff, hard, or warm.

The application of cold is indeed one of the most powerful means which we possess for abstracting heat and subduing inflammation, and it has been carried so far in some instances, that pounded ice and snow have been employed for the purpose. When these are not to be obtained, we may substitute as a refrigerant, pieces of soft linen moistened in a solution of nitre and muriated ammonia in water, or even in simple cold water; but they are to be renewed frequently.

In some cases of phlegmon, the pain and inflammation are so violent as to deprive the patient of his natural rest. When this happens, we may give opiates both with advantage and safety, provided sufficient evacuations have been premised. The dose, however, should be considerable; otherwise opium, instead of proving serviceable, will have a contrary effect. About fifty or sixty drops of tinctura opii may be given to an adult, an hour or two before bed-time, and in a like proportion to those of a younger age. Children at the breast may take a small quantity of the syrup. papav. albi, instead of the tinct. opii.

When the inflammatory symptoms run so high as to affect the general system, it is not unusual for a febrile disposition to prevail. In such cases, we may order some febrifuge medicine to be taken every three or four hours, combined with nitre.†

If, notwithstanding these means, the tumour should shew an evident tendency to suppurate, we are then to accelerate its progress by the application of warm emollient cataplasms, which ought to be renewed three or four times a day. If linseed can be procured, a poultice made of this, slightly bruised and boiled up with milk and water, will be preferable on account of its emollient quality: but when it is not to be obtained, the white bread poultice, with the small addition of oil, may be used; previous, however, to the application of the poultice,

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* ℞. Aq. Ammon. Acetat.
—— Diftillat.
Spirit. Vinos. Rectific. āā ℥ij. M.

Vel

℞. Ammon. Muriat. ℥j.
Acet. Diftillat. ℥ij.
Spirit. Camphorat. ℥j.
Aq. Litharg. Acetat. C. gutt. xx. M.
ft. Lotio.

† ℞. Nitri Purif. ℥ß.—℥j.
Aq. Fervent. ℥viij.
Antimon. Tartarifat. gr. ij.
Syr. Violæ ℥ij. M.
ft. Miftura cujus fumat Cochl. magnæ ij. pro dos.

Vel

℞. Hauft. Salin. ℥jß.
Nitri gr. x.—xv.
Vini Antimon. gutt. xij.
Syrup. Simpl. ℥j. M.
ft. Hauftus 3tia quaque hora fumendus.

the part affected should be well fomented with flannels wrung out of a warm decoction or infusion of emollient herbs.*

When the suppuration is completed, and the tumour is become very soft to the touch, and is near the surface, it is to be opened, either with a lancet or a trocar, in the part which is most dependent, taking care to press the matter perfectly out; after which the wound is to be dressed with dry lint, and a pledget spread with the unguentum resinæ flavæ to be laid over all. If the wound does not heal readily, the cinchona with other tonics should be used, till the patient is restored to health.

In very large abscesses, particularly in that of the psoas muscle, it has been found a judicious practice to evacuate the matter by means of a seton, or by a flat trocar in a canula, which is to be insinuated between the skin and cellular membrane for some space, and then to be plunged in a slanting direction down into the abscess, leaving the canula, and withdrawing the trocar. The orifice in the skin and deep-seated parts by this mean will not be in a direct line, and the severe constitutional symptoms which are apt to arise from an exposure of extensive cavities to the air, are thereby avoided. In the like cases, it will also be proper to direct the patient to take, at least, an ounce of Peruvian bark a day, in order to promote the production of proper pus; and to support his strength under the discharge, a nutritive diet, with a moderate use of wine, should be allowed.

The matter of an abscess is either absorbed or discharged, but more generally the latter; and in either case, if it is well conditioned, the cavity is gradually filled up by an operation of nature, which is termed granulation, from the new parts appearing in the form of small red grains. When this process goes on favourably, the granulations are of a florid red colour, and proceed in a regular manner till the cavity is accurately filled, its edges (if the matter of the abscess has been discharged externally) being even, or nearly so, with the sound skin.

When the granulation is too languid, it is to be forwarded by the same means which promote a favourable secretion of pus. It is however sometimes too luxuriant, forming irregular masses, which project beyond the lips of the wound. In such cases it will be necessary to check the granulating process, and destroy the projecting parts by escharotics; but for more particular information on this head, I must refer to the works on surgery.

Should phlegmonous inflammation have terminated in gangrene, we are then to stop the progress of the mischief, and promote the speedy separation of the dead parts from the living. To effect this, it was formerly customary to make slight scarifications, and afterwards to apply warm antiseptic fomentations, and poultices; but modern practitioners,

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* ℞. Flor. Chamæmel.
Fol. Althææ āā ℥j.
Papav. Alb. Exsiccat. ℥ß.
Aq. Ferventis ℔iv. M.
ft. Fomentum.

particularly Mr. Bell, and the late Mr. John Hunter, have highly disapproved of this mode of proceeding, and recommend a reliance to be placed on a liberal use of the Peruvian bark, together with a nutritive diet, and such a quantity of wine as will be sufficient to keep up the pulse, and induce the necessary slight degree of inflammation. To give energy to the system, to restore vitality to the affected parts, and to lessen the morbid irritability in them, are the objects which we should keep in view in all cases of gangrene.

Where gangrene arises from debility, opium frequently proves useful; and as it by no means counteracts the effects of the bark, it may be given along with it: indeed opium will prove generally beneficial, and particularly in that variety of the complaint in which no previous inflammation existed, but which is accompanied by violent pain.

The efficacy of the bark is in every instance indeed much increased by its junction with opium in these affections, and therefore they cannot be too early employed in the curative plan of treatment conjoined together.

In cases of gangrene, accompanied with convulsive spasms, or arising from any local injury, such as a fracture, &c. producing irritation, a combination of musk with ammonia has been found by Mr. White of Manchester, and other practitioners on his recommendation, to have been attended with a happy effect in abating subsultus tendinum, stopping the progress of mortification, and occasioning the dead parts to separate from the living. A bolus consisting of ten grains of musk, and the same quantity of ammonia, repeated every three hours, is what is advised on such occasions.

Musk combined with the volatile salt of amber, might probably prove a still more powerful remedy for checking the progress of gangrene arising from any local injury producing irritation.

By modern practitioners we are instructed to keep the parts cool, and that all applications to them ought to be cold, instead of warm, as was formerly practised. As an application to parts in a gangrenous state, there can be none better than a poultice made by stirring into an infusion of malt (such as may be readily obtained from the ale or porter brewers) as much oatmeal as is required to make it of a proper thickness, and afterwards adding about a spoonful of yeast.* In applying it, due care must be taken not to bind it on too closely, as the fermentation, a short time after its application, will be considerable, and its bulk, of course, so increased, as to put the cloths and bandages which confine it, very much on the stretch.

The cataplasma carbonis (which is prepared by mixing two ounces of wood charcoal, reduced to a very fine powder, with half a pound of the common farinaceous poultice) is another application which has lately been much used in gangrenous cases, as well as in sweetening fetid ulcers, and disposing them to granulate favourably.

By some communications through the medium of the Medical and Physical Journal,† we are given to understand that the progress of

* This is the Cataplasma Effervescens of the Pharmacopœia Chirurgica.

† See vol. xi. page 206.

mortification has been checked, and the offensive stench issuing from the wound entirely removed in a very short space of time, by sprinkling the diseased parts thickly over with nitre pulverised very fine. In the instances alluded to, the dressing was renewed twice or thrice a day.

When the diseased parts separate and slough off, dry lint is to be laid on the wound with a pledget, spread with some digestive ointment, applied over all.

In the second volume of the Transactions of a Society for the Improvement of medical and chirurgical knowledge, is inserted a paper from Dr. Harness, at that time a physician to the fleet, on the good effects of the application of the gastric fluid of graminivorous animals to parts in a gangrenous state. By this gentleman we are informed, that he found its application to succeed in more than a hundred cases of sphacelus in entirely removing the sloughs, and occasioning healthy granulations.

As a gentle stimulus to parts in a state of gangrene, where any is thought proper, and in preference to warm gums and balsams, ardent spirits, and even alkohol, Mr. B. Bell advises* the use of a weak solution of sal ammoniac (ammonia muriata) in vinegar and water. We are informed by him that a drachm of the salt, to two ounces of vinegar, and six of water, form a mixture of a proper strength for every purpose of this kind; but the degree of stimulus can be easily either increased or diminished, by using a large or smaller proportion of the salt.

In similar affections of the toes and feet, Mr. Pott very much disapproves of all stimulating applications, and in their stead recommends soothing and emollient ones,† and this with the view to avoid exciting pain. A case which sometime ago came under my inspection has, in my mind, decidedly established the superiority of the latter mode of treatment over the former. On meeting, in consultation, the professional gentlemen who had the management of it, I strongly urged the necessity of soothing and emollient applications (the good effects of which I had before witnessed on other similar occasions;) and these were adopted for a time with the greatest relief to the sufferings of the patient, as likewise arresting the progress of the mortification. Not happening to call again for three or four days, this prudential mode of proceeding was discontinued by the chief surgeon, and a stimulant one was substituted, to which plan, as a disciple of the old school, he was strongly bigoted.

The consequences were that the pains, which had before been much alleviated, became highly aggravated, and the mortification, which had been arrested in its progress, spread so very considerably as to threaten the greatest danger. Being now thoroughly convinced of his error, he was glad once more to have recourse to the soothing and emollient plan; by a strict pursuance of which; by administering opium to the amount of six or eight grains a day, so as to keep up a constant effect; by allowing a liberal use of wine; and by giving the Peruvian bark in sub-

* See his System of Surgery, vol. i. p. 112.

† See his Chirurgical Works, p. 799 and 800.

stance, in the quantity of about an ounce a day, joined with camphor (which combination seems to possess strong antiseptic powers,) the patient appeared for many weeks to have a great chance of recovering. The prospect, however, proved delusive; for he soon afterwards paid the debt of nature. From his having been withdrawn from under my care during the last six weeks, I cannot speak as to the mode of treatment which was latterly pursued.

It seems almost superfluous to observe, that it was found necessary to obviate the effect of the opium on the intestines, by a frequent use of some mild laxative or emollient clyster, so as to procure one or two evacuations daily. In the early stage of the disease, the cataplasma effervescens was employed, and seemingly with a most happy effect.

In this species of mortification, Mr. Pott reports, he found the Peruvian bark had little or no influence, but that opium in large doses, frequently repeated, proved an effectual remedy in many cases. To give the patient every possible chance of recovering, it will be best, I think, to administer both.

The termination of inflammation in a scirrhus is (as was before observed confined to glands. Upon a gland becoming scirrhous, we should use every means to disperse it, if possible; and if we cannot effect this, then we should endeavour to keep it stationary, and prevent its ulcerating and degenerating into a cancer.

In some cases of recent scirrhus, topical bleeding frequently repeated, by the application of several leeches, has been found highly serviceable.†

A gentle course of mercurial friction applied in the neigbourhood of the part affected, has likewise, in some recent cases, been attended with a happy effect; an instance of which occurred to me some years back. A. P. residing at Shennington, in Gloucestershire, aged 43 years, of a corpulent but irritable habit, was, about six weeks previous to her application to me, attacked with a tumour in her left breast, which had, during that time, gradually increased in size, and had at length become knotty and irregular, and was attended with severe lancinating pains extending into the axilla, with every other appearance of scirrhus, and such had it indeed been pronounced by the surgeon who had been called upon for his advice. Under the above circumstances, and without any hopes of success, I must acknowledge, I directed her to rub in, morning and night, about the size of a bean, of an ointment composed of an ounce of the unguentum hydrargyri fortius, and the same quantity of the unguentum ceræ, in which two drachms of camphor were dissolved, and to take, twice a day, two of the pills advised below,* washing them down with half a pint of the decoctum sarsaparillæ compositum, with the addition of thirty drops of the vinum antimonii. She was likewise enjoined to keep her body open, to make

† See Mr. Henry Fearon's Treatise on Cancers.

* ℞. Extract. Cort. Peruv. ʒij.
——— Cicutæ ʒj. M.
fᵉ. Massa in pilulas lx. dividenda.

use of a spare diet, consisting principally of vegetables and milk, and to abstain from all spirituous and fermented liquors. After a pursuance of this plan for about three weeks (some slight affection of the salivary glands having taken place during that period,) the tumour wholly disappeared, as well as every other symptom.

With regard to the use of mercury in scirrhous tumours, it is to be observed, that, whether given internally or applied externally, it can only be of service in the first stage of the affection, when simple obstruction, and not altered organization forms the disease. By its tendency to hasten ulceration (a natural consequence of its action,) it might prove highly prejudicial in cancerous cases; but in those of a scirrhous nature which are of a recent date, mercury joined with antimony, and given in small doses, long continued, with the strict observance of a spare regimen, has sometimes proved successful.

If the tumour, on a fair trial of these or any other means which the practitioner may think proper to employ, should not disperse; but, on the contrary, shew an evident tendency to ulcerate, and degenerate into a cancer, then, in my opinion, the sooner it is extirpated, the better will it be for the patient, as it is more than probable, that the affection is not originally connected with the system, but is merely local, and that the constitution or habit does not become tainted, until ulceration takes place.

The treatment of a scirrhus terminating in ulceration is noticed under the head of Cancer.

Of ERYSIPELAS.

THIS disease is an inflammatory affection, principally of the skin, when it makes its appearance externally, and of the mucous membrane when it is seated internally; and is more liable to attack women and children, and those of an irritable habit, than men, or those of a plethoric and robust constitution.

It is remarkable that erysipelas sometimes returns periodically, attacking the patient once or twice in the year, or even once every month, and then by its repeated attacks it often gradually exhausts the strength, especially if he be old and of a bad habit.

When the inflammation is principally confined to the skin, and is unattended by an affection of the system, it is called Erythema; but when the system is affected, it is named Erysipelas.*

It sometimes happens that the inflammation extends to the cellular membrane beneath the skin, whence a real phlegmon and collection of matter become joined to the erysipelas; but this is mostly the case where there has been a previous scratch or injury of the skin.

Every part of the body is equally liable to erysipelatous inflammation, but it more frequently appears on the face, legs, and feet, than any

* In Dr. Cullen's nosological arrangement of diseases, eryfipelas is placed among the exanthemata, but I have thought it beft not to feparate it from erythema, that the two fpecies may thereby be feen at one view.

where else when seated externally; and it occurs oftener in warm climates than phlegmonous inflammation.

It is brought on by the several causes that are apt to excite inflammation; such as injuries of all kinds, the external application of stimulants, exposure to cold, an obstructed perspiration; and it may likewise be occasioned, perhaps, by a certain matter generated within the body, and thrown out on its surface. A particular state of the atmosphere seems sometimes to render it epidemical, as we often find the angina scarlatina, which is a species of internal erysipelas, prevail as such.

In slight cases, where it attacks the extremities, it makes its appearance with a roughness, heat, pain, and redness of the skin, which becomes pale when the finger is pressed upon it, and again returns to its former colour, when it is removed. There prevails likewise a small febrile disposition, and the patient is rather hot and thirsty. If the attack is mild, these symptoms will continue only for a few days, the surface of the part affected will become yellow, the cuticle or scarfskin will fall off in scales, and no further inconvenience will perhaps be experienced; but if the attack has been severe, and the inflammatory symptoms have run high, then there will ensue pains in the head and back, great heat, thirst, and restlessness; the part affected will slightly swell; the pulse will become small and frequent; and about the fourth day, a number of little vesicles, containing a limpid, and in some cases a yellowish fluid, will arise. In some instances, the fluid is viscid, and instead of running out, as generally happens when the blister is broken, it adheres to, and dries upon the skin.

In unfavourable cases, these blisters sometimes degenerate into obstinate ulcers, which now and then become gangrenous. This, however, does not happen frequently; for although it is not uncommon for the surface of the skin, and the blistered places, to appear livid or even blackish, yet this usually disappears with the other symptoms of the complaint.

The period at which the vesicles shew themselves is very uncertain. The same may be said of the duration of the eruption. In mild cases it often disappears gradually, or is carried off by spontaneous sweating. In some cases it continues without shewing any disposition to decline for twelve or fourteen days, or longer.

The trunk of the body is sometimes attacked with erysipelatous inflammation, but less frequently so than the extremities. It is not uncommon, however, for infants to be attacked in this manner a few days after birth; and in these it makes its appearance about the genitals. The inflamed skin is hard, and apparently very painful to the touch. The belly often becomes uniformly tense, and sphacelated spots sometimes are to be observed. From dissections made by Dr. Underwood, it appears that in this form of the disease the inflammation frequently spreads to the abdominal viscera.—See Infantile Erysipelas.

Another species of erysipelatous inflammation which most usually attacks the trunk of the body, is that vulgarly known by the name of Shingles, being a corruption of the French word ceingle, which implies

a belt. Instead of appearing an uniform inflamed surface, it consists of a number of small pustules, extending round the body a little above the umbilicus, which have vesicles formed on them in a short time. No danger attends this species of erysipelas, as I have experienced in innumerable instances.

When erysipelas attacks the face, it comes on with chilliness, succeeded by heat, restlessness, thirst, and other febrile symptoms, with a drowsiness or tendency to coma or delirium, and the pulse is very frequent and full. At the end of two or three days, a fiery redness appears on some part of the face, and this at length extends to the scalp, and then gradually down the neck, leaving a tumefaction in every part the redness has occupied. The whole face at length becomes turgid, and the eyelids are so much swelled, as to deprive the patient of sight. When the redness and swelling have continued for some time, blisters of different sizes, containing a thin colourless acrid liquor, arise on different parts of the face; the skin puts on a livid appearance in the blistered places; but in those not affected with blisters, the cuticle, towards the close of the disease, falls off in scales.

No remission of the fever takes place on the appearance of the inflammation in the face; but on the contrary, it is increased as the latter extends, and both will continue probably for the space of eight or ten days. In the course of the inflammation, the disposition to coma and delirium is sometimes so increased, as to destroy the patient between the seventh and eleventh days of the disease. When the complaint is mild, and not marked by a fatal event, the inflammation and fever generally cease gradually without any evident crisis.

If the disease arises in a bad habit of body, occupies a part possessed of great sensibility, is accompanied with much inflammation, fever, and delirium, and these occur at an early period, we may suppose the patient exposed to imminent danger. Where translations of the morbid matter take place, and the inflammation falls on either the brain, lungs, or abdominal viscera, we may entertain the same unfavourable opinion. Erysipelas never terminates in suppuration, unless combined with a considerable degree of phlegmonous inflammation, which is however sometimes the case; but in a bad habit, it is apt to terminate in gangrene, in which case there will also be great danger. When the febrile symptoms are mild, and unaccompanied by delirium or coma, and the inflammation does not run high, we need not be apprehensive of danger.

Where the disease has occupied the face, and proves fatal, inflammation of the brain, and its consequences, are to be met with on dissection.

Great diversity of opinion has prevailed among the practitioners in medicine, concerning the mode of treatment to be adopted in erysipelas; some pursuing the same antiphlogistic plan advised in phlegmonous inflammation; others again, disapproving of all evacuations, and treating it as a disease dependent on irritability.

To reconcile these jarring opinions, I shall consider the complaint as sometimes combined with phlegmonous inflammation, as now and then happens, when it arises in a full plethoric habit. In such a case,

if the skin is hot and dry, the pulse full, strong, hard, and frequent, and the head affected with stupor or delirium, it will undoubtedly be proper to have recourse to bleeding, cooling purgatives, diaphoretic medicines, and the strict observance of an antiphlogistic regimen, as recommended in phlegmon. Topical bleeding, however, by means of leeches, which proves so useful in other varieties of inflammation, is not admissible in erysipelas, as the orifices by which it is drawn, are very apt to degenerate into those troublesome ulcers, which the disease, when it terminates in effusion, sometimes produces. When we have occasion, therefore, to draw off blood, in order to counteract the inflammatory diathesis, we must do it by opening a vein; and where the head is the part diseased, the jugular will be the most proper. As to the quantity to be taken away, we are to be regulated in this, by the violence of the inflammatory symptoms, the appearance of the blood when drawn, and the strength of the patient. If the disease is perfectly pure or local, does not affect the head, is unaccompanied with symptoms of general inflammation, and has arisen in a weak irritable habit, or is accompanied with a fever of the typhoid kind, bleeding will be highly improper.

The same observation will likewise apply to the making use of strong purgatives; but although I disapprove of such medicines in the latter instance, still it will be right to keep the body open by gentle saline laxatives, so as to procure one or two motions daily.

Where the inflammation is of a phlegmonous nature, and the head is much affected, a liberal use of active purgatives will undoubtedly be advisable.

In those cases where the fever and inflammation run high, diaphoretic medicines will be proper, and they may be given conjoined with nitre, as advised in phlegmon, or as directed under the head of Inflammatory Fever.

As erysipelatous fevers often terminate by sweat, mild diaphoretics, with plentiful dilution, become a necessary part of the treatment, and should never be neglected.

In those cases where the head and face are affected, and coma prevails, the semicupium, together with sinapisms applied to the feet, will be highly advisable.

It has been observed, that when the disease has made some progress, blisters of various sizes usually arise. The most proper application will be some dry mealy powder, such as starch, wheat-flour, oatmeal, or chalk; but oatmeal may perhaps be preferable to the rest, on account of its not being likely to cake and become hard by the humour which weeps from the parts affected. Probably external applications that reduce the heat of the skin, such as linen cloths wetted with cold water, might be employed with advantage. Any application of the stimulant kind, as solutions of lead, copper, or of alum, used early in the disease, must be injurious.

When effusion is found to have occurred in any considerable quantity, it ought to be discharged by making a small opening in the most dependent part. It has been usual to employ emollient fomentations

and poultices in this state of the complaint, in order to bring on a proper suppuration; but the effusion which sometimes happens in erysipelas, not being of a nature to be converted into pus, as in the case of a pure phlegmon, they certainly cannot prove serviceable. The ceratum lithargyri acetati, or the unguentum cerussæ acetatæ, will be the best applications.

These are the means to be employed when erysipelas happens to be combined with phlegmonous inflammation. When it arises in a weak delicate habit, and is accompanied with symptoms of irritation, such as depression of strength, a quick small pulse, &c.; then, to take off the irritability, and guard against a termination in gangrene, which sometimes ensues, we should give the Peruvian bark, mineral acids, Virginian snake-root, camphor, aromatic confection, and wine. In those cases where the disease is confined to the trunk and extremities, and where there is considerable pain and irritation, the employment of opium seems advisable; indeed I have used it on such occasions seemingly with much advantage. In erysipelas of the face, even without coma or delirium, from the tendency of this form of the disease to affect the brain, opium is to be regarded as a more doubtful remedy.

Where a tendency to mortification becomes apparent, the above medicines, with wine and other antiseptics, will be the more necessary. (See Phlegmonous Inflammation terminating in gangrene.) Ammonia joined with aromatic confection may be given internally, with some probability of advantage, in all cases of erysipelatous inflammation of the extremities, or other parts, which threaten to terminate in gangrene. When erysipelas is accompanied with a tendency to the worst kinds of hemorrhagy, from being of a malignant nature, alum and the sulphuric acid are particularly indicated.

If the disease is mild, and unaccompanied with febrile symptoms, it will be sufficient to keep the patient within doors, without confining him to his bed.

In those cases where the inflammatory symptoms run high, the diet should consist of light nourishing things, such as preparations of barley, sago, tapioca, rice, Indian arrow-root, panado, and the like; and his drink should be lemonade, tamarind-beverage, or barley-water, acidulated with some vegetable acid; but in those cases where symptoms of irritation prevail, a more generous diet, such as animal broths, and a moderate use of wine, ought to be allowed.

For the treatment of the erysipelas with which infants are liable to be attacked, see the diseases peculiar to them at the end of this work.

Of INFLAMMATION of the BRAIN and its MEMBRANES, or PHRENITIS.

PHRENITIS is an inflammation of the parts contained in the cavity of the cranium, and may affect either the membranes of the brain, or the brain itself. It is called primary, or idiopathic, when it exists in-

dependent of any other disorder; and symptomatic, when it arises in consequence of some other disease, as fevers and inflammatory affections; which species is that most universally met with, the other occurring but very seldom.

Its characteristics are a severe pain in the head, redness of the face and eyes, intolerance of light and sound, watchfulness, and violent delirium.

The causes which give rise to idiopathic phrensy are such as directly stimulate the membranes, or substance of the brain, or increase the impetus of the blood in its vessels: hence violent fits of passion, intense study, excessive venery, severe exercise, external violence of any kind, an immoderate use of vinous and spirituous liquors, and a long-continued exposure to the heat of the sun, may be regarded as the remote causes. Many acute diseases, and a long want of sleep may give rise to symptomatic phrensy.

The idiopathic is usually preceded by long continued, and almost constant watching, or frightful dreams, acute pains at first in the neck and occiput, afterwards extending to the head, deep respiration, inability to recollect circumstances which have lately happened, suppression of urine, and irregular pulse. As the disease advances, the eyes sparkle, and are violently agitated; there is a ferocity in the countenance, with universal restlessness, deafness, great confusion of ideas, violent ravings, intolerance of light, evident pulsation in the temporal and carotid arteries, and the most furious delirium. The tongue is dry, rough, and of a yellow or black colour, the face is of a deep red, and the pulse is small, quick, and hard.

The symptomatic phrensy is constantly preceded by acute fever, or some inflammatory complaint, and is usually accompanied with inability to sleep, constant watching, delirium, picking at the bed-clothes, redness and fierceness of the eyes, wild look, and deep breathing.

Phrenitis is distinguished from mania, by the quickness of the pulse, and the attendant fever and pain in the head; and from that species of delirium which occurs in low fevers, unaccompanied with inflammation; by the appearance of the countenance and eyes; for in true phrensy the face is red, the features are rather enlarged than shrunk, and the eyes protuberate, and sparkle; whereas in the delirium supervening to low fever, the face is pallid, the features are shrunk, and the eyes pearly. It is to be distinguished from synocha by the state of the pulse, as in the latter it is strong and full; whereas in the former it is small, hard, and more rapid. In phrenitis, the delirium is the primary affection; but in synocha, it is consequent upon the general fever.

A phrensy, whether idiopathic or symptomatic, may always be regarded as a dangerous and alarming complaint; it often proves fatal between the third and seventh day; and if long protracted, is apt to terminate in mania, or great prostration of strength: it often terminates in stupor and insensibility. Grinding of the teeth, white or ash-coloured fæces, suppression of urine, startings of the tendons, with convulsions, cold sweats, a fluttering pulse, and coma supervening on delirium, denote a fatal termination: on the contrary, when there is a copious

hemorrhage from the nose, mouth, or lungs, or even from the urinary passages or hemorrhoidal vessels; or when diarrhœa ensues; when the delirium is relieved by sleep, and the patient remembers his dreams; when the perspiration is free and general; the deafness diminished or removed; the pulse less frequent, but fuller and soft; and the febrile symptoms become milder, there are hopes of a recovery.

The appearances on dissection are pretty much the same with those to be observed in cases of inflammatory fever, viz. a determination of blood to the vessels of the head, producing either effusion or suppuration in the ventricles, or adhesions of the dura mater to the skull. In some instances, the pia mater is converted into a membrane, resembling in thickness and consistence the dura mater.

On the first coming on of idiopathic phrensy, immediate recourse should be had to bleeding, proportioning the quantity that is drawn off, to the age and constitution of the patient, and the severity of the symptoms. Opening the jugular vein, or temporal artery, may, perhaps, be preferable to drawing blood from the arm; and taking away a considerable quantity at once, will certainly be better than drawing off only a little at a time, and repeating the operation frequently. If the patient is perceived to be much reduced by the largeness of the first and second evacuations, and the disease should nevertheless still continue with violence, the application of several leeches to each temple will be more advisable than any third bleeding from the system. When leeches are not to be procured, blood may be abstracted by means of a cupping-glass and scarificator.

The next proper step to be taken, will be to direct the head to be shaved, and to apply a large blister over it. Linen cloths wetted with vinegar and water, or iced water, may likewise be kept constantly to the temples.

With the view of obviating the inflammatory diathesis, and of diverting the humours from the head, a strong purge* may be ordered; and this ought to be repeated every second or third day, during the continuance of the complaint.

In all inflammatory affections of the head, a copious discharge from the intestines will be found highly beneficial, and experience has indeed ascertained that venesection itself is often less powerful. To assist in diminishing the determination of blood to the head, the patient should be kept as near the erect posture as can easily be borne.

Warm bathing of the lower extremities, and the application of rubefacients to them, for the purpose of revulsion, have been very generally employed in idiopathic phrenitis. By some physicians, and particularly by Dr. Cullen, they have, however, been regarded as ambiguous remedies; and it is probable that they will be likely to do harm, if employed before the excitement has been sufficiently reduced.

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* R. Calomelanos gr. viij.—x.
Extract. Colocynth. gr. vj. M.
fiant pilulæ iij. pro dos.
Vel
R. Pulv. Jalapii gr. xv.
Calomelanos gr. vj. M.
ft. Pulvis cathartic.

In symptomatic phrenitis, particular attention should be paid to the primary disease which has given rise to it, and the treatment ought to be varied according to the nature and progress of the disorder which has occasioned it. If it is in its first stage, and inflammatory, copious bleeding from the system will be necessary; but if it has been of some continuance, drawing blood from the temples, by means of leeches or cupping with scarifications, will be preferable.

Symptomatic phrenitis will not require our using active purgatives; on the contrary, we should keep the body open only with gentle aperients, or laxative clysters, administered from time to time, as the occasion may require. In most cases, the application of a blister to the neck, or between the shoulders, will be proper. As a medicine, the patient may take in both species of phrenitis a diaphoretic bolus* every three hours, washing it down with two or three table-spoonfuls of some febrifuge mixture.†

From the well-known powers of digitalis in lessening the action of the heart and arteries, might not small doses of it be administered with advantage in phrenitis, but more particularly the idiopathic?

If phrenitis arises in consequence of some suppressed evacuation, or eruption, we must endeavour to restore it, by the proper means, which will be understood from the nature of the former discharge.

During the whole course of the disease the patient ought to be kept cool and as quiet and undisturbed as possible, excluding light from him, and his food should be light and nourishing, consisting of preparations of barley, sago, gruel, &c. Cold acidulated liquors should be allowed with freedom. In idiopathic phrenitis, every part of the antiphlogistic regimen will be necessary.

Of an INFLAMMATION of the EYE, or OPHTHALMIA.

OPHTHALMIA is of two kinds, viz. the idiopathic and symptomatic; the latter proceeding either from diseases of the eye, or parts in its neighbourhood, or from diseases of the system; and the former from the causes assigned below.

In ophthalmia, the inflammation is seated either in the membranes of the eye, its deep-seated parts, muscles, and the lachrymal gland, or in the sebaceous glands placed in the edges of the eyelids; but sometimes all these parts are affected in consequence of sympathy, and indeed it rarely happens, that any of these suffer in a considerable degree without the inflammation extending further. It readily spreads along the conjunctiva, from the tarsi to the eye, or in the contrary direction. When

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* R. Camphor. gr. iv.
Pulv. Antimon. gr. ij ſs.
Conferv. Roſæ q. s. M.
ft. Bolus.

† R. Succ. Limon. ℥ij ſs.
Ammoniæ ʒſs. vel q. s.
Aq. Menth. Sativ. ℥j.
—— Fontan. ℥iv.
Nitri Purif. ʒj.
Syrup. Roſæ ℥ij. M.
ft. Miſtura.

the conjunctiva is much inflamed, the adnata soon partakes of the inflammation; and if the complaint increases, it gradually spreads to the deep-seated parts.

With some people there is a great tendency to a recurrence of the disease, and in many cases it has been observed to renew its attacks, or to have regular exacerbations at a particular time of the day.

The causes producing ophthalmia are, external injuries, such as blows, contusions, and wounds on the eyes; extraneous bodies of an irritating nature, introduced under the eyelids; exposure to bleak winds and cold; too free a use of vinous and spirituous liquors; the suppression of accustomed discharges; the long application of a strong light, or fixed attention to minute objects; and an acrimony prevailing in the mass of blood. It is likewise often symptomatic of other diseases, such as measles, small-pox, scurvy, scrofula, and syphilis.

Mons. Sonnini, in his Travels through Egypt, mentions, that ophthalmia is a complaint which is endemial in that country, and that eyes perfectly sound, or which are not swelled, are rarely to be seen. This he attributes to the excessive heat, the air being impregnated with noxious particles, and the acrid and burning dust which the winds scatter in the atmosphere. Another cause of the cecity so general at Cairo, he says, is the frequent watering of the streets and houses. Water, thrown abundantly and frequently upon a burning soil, containing a great many saline particles, produces, he observes, acrid vapours, which may be considered as one of the principal causes of blindness in Egypt.

Sir Robert Wilson mentions* that the Egyptian ophthalmia is supposed to originate in the nitrous particles emitted from the ground by the force of the sun, which are of a quality so pungent and penetrating as to injure the fine vessels of the eye. The acrid and burning dust flying continually in the atmosphere, irritates still more the already affected part; while the reflection of the soil, the heat of the air, and vivid light of the sky, tend to weaken the sight, at last occasioning excessive inflammation.

According to the best information which we have received, this species of ophthalmia arises in the first instance soon after the overflowing of the Nile, or rather on its recession, when a vast quantity of slimy mud is deposited on its banks and other places which were overflowed, and which being acted upon by a powerful sun, send forth miasmata or effluvia that excite inflammation in the eyes of this peculiar nature. The custom in Egypt of sleeping in the open air, possibly, may increase the power of the cause.

Ophthalmia has not been considered in Great Britain as a contagious disease, although it has often been known to appear as a prevailing epidemic at different times, and probably the common species cannot be transferred from one person to another by any kind of intercourse, or even by the immediate application to a sound eye, of any secreted fluid, or matter from a diseased one; but it is an undoubted fact, that the

* See his History of the Expedition to Egypt.

Egyptian species is highly contagious. During the campaign in Egypt our troops were dreadfully afflicted with it, and many returned with a total loss of sight; whilst others, still labouring under the disease, propagated it at Malta and Gibraltar, where they first landed; and from which places it was at length brought into this country.

It seems to be established, I think, on the most indisputable evidence, that the Egyptian ophthalmia may be propagated by contagion, and that in this way it has been introduced into our united kingdom, and has spread in the same manner as in its native soil. The influence of climate and other local circumstances, on the general character and progress of the disease, cannot, however, be denied. In most of the instances in which this species of ophthalmia has prevailed in this country, it has appeared with mitigated symptoms, in comparison with the disorder, as it occurs in Egypt; but it has nevertheless been observed, that where the patients were exposed to the influence of a marshy soil, it equalled in the severity of its symptoms the Egyptian ophthalmia. A modern writer † assures us, that its spreading is not owing to contagion in the ordinary sense of the word (that is, to any infectious matter thrown off from the system of those labouring under the disease, and operating at a greater or less distance from its source,) but to the actual conveyance of the purulent matter from the inflamed organ to the eye of a person in health. Indeed Dr. Edmonston has also pointed out,‡ that the sphere of action of this contagion is very limited, and that most of the cases which came under his observation, arose from the direct application of virus from diseased, to sound eyes.

Mr. Ware is of opinion § that the disease which has appeared as a prevailing epidemic among soldiers since the return of our troops from Egypt, ought to be denominated the purulent ophthalmia instead of the Egyptian, since one of its chief symptoms, and that which distinguishes it from any other, is the profuse discharge of a purulent coloured fluid, closely resembling the pus or matter that issues from an ulcerated surface. He also thinks, that it greatly resembles, in many respects, a disorder, which he has described with minuteness in his Observations relative to the Eye (see vol. i. page 129 and 309,) under the title of the Purulent Eye of new-born Children, and in which, no less than in that under consideration, the discharge of matter is always profuse. With due deference, however, to Mr. Ware, I cannot help considering the two diseases in question, as perfectly distinct.

The common ophthalmia usually comes on with a sensation, as if some gritty particles had insinuated themselves under the eyelids, accompanied with great heat, redness, and pricking, darting pains. As it increases, the parts swell, and the vessels of the eye become not only increased in size, and turgid, but appear more numerous than in the

† See an Account of the Ophthalmia which has appeared in England since the Return of the British Army, by J. Vetch, M. D.

‡ See Edmonston's Account of an Ophthalmia which appeared in the 2d Regiment of Argyleshire Fencibles in 1802, with Observations on Egyptian Ophthalmia.

§ See his Remarks on Purulent Ophthalmy.

natural state. Great pain is excited upon the least motion of the ball of the eye; the patient cannot bear the light, and an effusion of tears from the lachrymal gland ensues, which is of so acrid a nature as to excoriate every part on which it happens to fall. When the inflammation runs high, a slight febrile disposition often attends. These appearances, after some days continuance, gradually abate, and at length entirely cease; but, in some cases, a discharge of thick glutinous matter ensues, which collects in considerable quantities about the angles of the eye, particularly during sleep. Where only one eye has been affected, it is often succeeded by an inflammation of the other, particularly in a scrofulous habit.

The symptoms to be met with in the Egyptian ophthalmia are, in some respects, obviously distinct from those of the common species. At the commencement, the internal lining of the palpebræ appears to be the chief seat of the disease; it is affected through its whole extent by a purulent exudation, and a quantity of pus is afterwards secreted by the eye itself, unattended, however, by any considerable derangement of its functions. The discharge of tears is likewise copious, but no great intolerance of light is found to prevail. This state of the eye remains for some time, the patient expressing no great uneasiness, and the purulent exudation not being very perceptible, unless the lower lid be depressed. Unfortunately, the symptoms are apt to be overlooked, and the complaint is not much regarded, till it has attained a considerable height.

Now all the morbid symptoms become suddenly and greatly aggravated; the lids are extremely swelled; the discharge of pus is augmented; the pain becomes very acute, and the eye itself assumes the appearance of chemosis. In most cases, the pain observes periodical paroxysms of three or four hours continuance. During these local complaints, scarcely any general affection of the system occurs; the pulse is a little quickened, but is not fuller than in its natural state; nor are any marks of inflammatory fever exhibited. When the discharge of pus ceases, a number of granulations arise from the interior of the eyelids, and present a shocking spectacle. On their subsiding, the surface of the cornea is frequently found to be opaque, sometimes covered with granulations, and occasionally ulcerated. The most unfortunate termination, however, is a rupture of the cornea; an occurrence which is apt to attend the disease in its most violent form, and which is usually followed by irremediable blindness.

From the detail now given, it is evident that the absence of the intolerantia lucis; the regularity of the paroxysms of pain; the unembarrassed state of the functions; the absence of general fever, and the formation of purulent matter, in particular; are the symptoms which characterize Egyptian ophthalmia.

With some, the disorder lasts only nine or ten days; in others, the patients have suffered for months: and, unfortunately, there is no security, we are informed, against a new attack, even after a perfect recovery.

If ophthalmia is slight, and not symptomatic of any other disease, it will readily give way to proper means; but if it is very violent, or has continued for any length of time, it is apt to occasion specks, or to ter-

minate in a dimness of sight or opacity of the crystalline lens. In some cases, the inflammation terminates in suppuration of the cornea and deep-seated parts. When it arises in a scrofulous habit, or is symptomatic of syphilis, the cure is often tedious.

In the treatment of ophthalmia, its varieties of idiopathic and symptomatic, and of acute and chronic, ought duly to be considered, and to form the basis of our practice. Our object therefore should be, to determine with precision, how far each particular case is to be referred to one or other of these kinds, and to adopt our plan accordingly.

Those who are engaged in an extensive practice, now and then meet with cases of idiopathic and acute ophthalmia, accompanied not only with a high degree of organic inflammation, but likewise with much systematic derangement, such as thirst, great heat of the body, fulness and frequency of the pulse, severe pains in the head, and violent throbbings of the temporal arteries. Such instances are, however, rare; but when they do occur, general bleeding or venesection ought not to be neglected; and we should take care to proportion the quantity we draw off to the existing circumstances. In the very worst cases, where there may be some danger of phrenitis ensuing, the blood ought to be drawn from the jugular vein or temporal artery, in preference to taking it from the arm.

In general, however, ophthalmia is only a local affection, accompanied with little or no fever, except what is excited by the irritation or pain in the organ, and this but trifling; and therefore it seldom will be necessary to resort to general bleeding: the preferable way will be to draw blood from the neighbourhood of the affected part, by applying several leeches round the eye; which process we may repeat again and again, as long as the inflammation continues. Where leeches cannot be procured, blood must be drawn from the temples by scarifying and cupping. If the inflammation runs high, so as to endanger vision, by producing an opacity, it will be advisable to make scarifications daily with the edge of a lancet, on the turgid vessels of the adnata itself; which, if done by a steady hand, will be attended with no kind of danger, but, on the contrary, with infinite advantage.

It is almost unnecessary to observe, that when ophthalmia has arisen from any extraneous body getting into the eye, as particles of sand, dust, lime or metal, small flies, the hairs of the eyelids, &c. the irritating cause ought immediately to be removed, and the part be defended from the light by the patient's wearing a deep shade of green silk, and sitting in a darkened room.

Having adopted topical bleeding, we may then order some active purgative to be taken; and this should be repeated every third or fourth day, as long as may be found necessary.

A few grains of calomel, with a sufficient quantity of jalap, or a solution of any of the neutral salts, will best answer the intention.

Where the complaint has arisen from exposure to cold, or other causes suppressing the perspiration, it is probable that the patient may receive benefit from small doses of some antimonial preparation given so as to excite a proper diaphoresis. (See Synochus.) The pediluvium may also be employed with the same intention.

To abate the inflammation and irritation, it is customary to have recourse to the frequent application of some cooling and astringent wash. Such remedies applied to the eye by means of an eye-cup, or by wet pledgets, prove, beyond a doubt, highly serviceable. Any of the undermentioned* may be used. Where the pain is very acute, forty or fifty drops of the vinous tincture of opium may be added to any of the foregoing applications, or the eyes may be bathed frequently with a decoction of bruised poppy-heads. In such cases, an internal use of opium will also be advisable, and it may therefore be taken in doses of a quarter of a grain, repeated every four or six hours.

For the purpose of appeasing heat and inflammation in the eyes, some practitioners prefer warm collyriums to cold ones; and among this number, I think, is Mr. Ware.

Ophthalmia, when acute, is frequently accompanied with a severe and distressing pain in the temples, for the alleviation of which a late author† strongly recommends a tincture of tobacco, prepared as below,‡ to be employed as an embrocation frequently over the part that is painful. He likewise advises a little of it to be dropped into the eye where the organ is tender, and its vessels much enlarged.

It has been mentioned, that the eyes are apt to be glued together (particularly during sleep) by a thick glutinous matter which is secreted. To prevent this inconvenience, some kind of emollient liniment § may be inserted between the eyelids every night before the patient retires to rest. In the ophthalmia tarsi the unguentum hydrargyri nitrati is one of the most powerful remedies we can employ. It will seldom be necessary to use poultices for an inflammation of the eye, except it is of the purulent kind, in which case we may apply with advantage one made by stirring a lump of alum in the whites of two eggs until they form a coagulum, and this is to be laid to the eye between two pieces of thin linen or muslin. Cold poultices of rasped potatoes and turnips are often used on such occasions.

In the purulent ophthalmia, to which children are subject, Mr. Ware advises the use of a collyrium prepared as mentioned below.‖

† See Edward M. Noble's Treatise on Ophthalmia, Part II.

* ℞. Zinc. Vitriolat.
Cerussæ Acetat. āā gr. viij.
Aq. Distillat. ℥vj. M.
f. Collyrium.
Vel
℞. Aq. Ammon. Acetat.
—— Rosæ singul. ℥ij. M.
Vel
℞. Collyrii Ammon. Acet.
Misturæ Camphorat. āā ℥ij. M.
Vel
℞. Aluminis Purif. ℥ss.
Aq. Rosæ ℥vj. M.
Vel
℞. Aq. Rosæ ℥iij.
—— Litharg. Acetat. gutt. xv. M.

‡ ℞. Fol. Nicotian. Incis. ℔ss.
Camphoræ ℥ij.
Spirit. Vin. Rectificat.
Aq. Distillat. āā ℔j.

§ ℞. Tutiæ Præparat. ℥j.
Unguent. Sperm. Ceti ℥j. M.
Vel
℞. Unguent. Adipis Suillæ ℥j.
Zinc. Vitriolat. ℥ss. M.
Vel
Unguent. Cerussæ Acetat.

‖ ℞. Aquæ Cupri Vitriolat.
—— Camphorat. āā ℥ij.
—— Distillat. ℥iv. M.

He is of opinion that the purulent is very similar to the gonorrhœal ophthalmia. He found the purulent eye, we are told,* most commonly to occur in the children of those women who have had an acrimonious discharge from the vagina at the time of delivery; and the purulent ophthalmia of adults, he thinks, is very generally found connected with some gonorrhœal affection. In public schools, he noticed the disease to spread obviously in consequence of the indiscriminate use of basins and towels among the children. Hence, he believes that the purulent ophthalmia arises from the direct application of some poisonous matter to the eyes.

When the complaint is found not to give way to topical bleeding, purging, and the astringent applications which have been advised, it may be proper to put on a blister at the back of the neck, or behind the ear on the same side with the eye which is affected, and it may be kept open by dressing it with some stimulating ointment.‡ In those cases where the disease appears to be constitutional, issues near the part, or a seton in the neck, may be very proper.

In very inveterate cases of ophthalmia, it might probably be of advantage to drop into the eye a strong infusion of digitalis, or the extract of belladona dissolved in water, as has been proposed by Dr. Rimarus of Hamburgh, previous to the operation of the extraction of the crystalline lens, in cases of cataract, in order to produce a temporary paralysis of the retina. The former of these is much employed by an eminent veterinary surgeon (I understand) for the purpose of subduing violent inflammation in the eyes of horses, and has been found a very efficacious remedy.

In a case of obstinate ophthalmia, which had resisted the usual means, the application of oleum terebinthinæ, in a diluted state, was found to be attended with the most beneficial effects.† Spirits of wine is another application of a similar nature, which has been employed in some cases of ophthalmia with much advantage.§ Covering the parts with pieces of bladder, softened by dipping them in warm water, and then keeping the outer surface constantly wetted with the spirits, is the mode which has been advised to be adopted.

In chronic inflammation of the eye, the tinctura thebaica, or vinous tincture of opium, constitutes one of the best applications we can employ, and it is much used by Mr. Ware on such occasions.

If ophthalmia is dependent on a venereal taint, mercury is the remedy we must rely on to remove it. When it arises in a scrofulous habit, affecting chiefly the tarsi, and is attended with ulcerations, as is often the case, Peruvian bark, with alteratives, mineral waters, and sea-bathing, will be the most proper remedies, and their effect may be in-

* See his Remarks on the Purulent Ophthalmia.
† See Memoirs of the Medical Society, vol. v. Art. 30.
§ See the same . . . . . Art. 7.

‡ ℞. Unguent. Cantharid. ʒij.
——— Resin. Flav. ʒj. M.
℔. Unguentum.

creased by the topical application of mercury or copper,* in the form of liniment or wash. In these cases hemlock, combined with Peruvian bark, has sometimes proved serviceable. Cinchona, with prepared natron, may also have a good effect.

When specks have ensued, in consequence of previous inflammation, which has destroyed the transparency of the cornea, a powder composed of equal parts of white sugar and alum, or of sugar and nitre finely pulverized, may be applied to the diseased part two or three times a day, on the point of a fine camel's hair pencil. If these do not remove them, we may make trial of another composed of one part of verdegris, or hydrargyr. nitrat. ruber, levigated with about six parts of fine sugar. A weak solution of hydrargyr. muriatus, applied to the eye as a wash, is sometimes attended with a good effect, and will by no means interfere with a use of the powder, if applied separately. (See the prescription below.)

An ointment,† much used by Mons. Pellier for the like purpose, has been recommended by Mr. Bell.

In employing escharotics for the removal of opacities of the cornea, much care and attention will, however, be requisite, otherwise they may prove more frequently injurious than serviceable.

That species of opacity which appears situated on the external surface of the cornea, may sometimes be removed by the knife, but not always; as it is frequently so much diffused, as to render such an operation impracticable. A bad case of this kind of opacity, which arose from a local injury, and which extended over the whole lucid cornea, was entirely removed under my care, by having a few drops of the aq. cupri ammoniati admitted daily into the eye, and this in a very short space of time.

In opacities of the cornea, the application of animal gall to the part has been found to be efficacious, when other remedies have failed. Being a stimulant, it ought never to be applied while the inflammatory action is increasing, but should not be delayed one minute after the inflammation is at a stand, as an indolent unhealthy state is apt to take place, which too often terminates in opacities, that no applications can afterwards remove. It may either be used pure, or diluted; perhaps the latter may be most advisable at first, as it is apt to occasion a painful sensation: but this, however, soon goes off. Its effects seem to be similar to those of the unguentum hydrargyri nitrati, and a solution of the argentum nitratum.

In all cases of ophthalmia it will be requisite to avoid every thing

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* Unguent. Hydrarg. Nitrat.
Vel
℞. Hydrarg. Muriat. gr. ij.
Ammon. Muriat. gr. v.
Aq. Fontan. ℥vj. M.
ft. Collyrium.
Vel
℞. Zinci Vitriolat. ℈j.
Adipis Suillæ ℥j. M.

† ℞. Hydrargyri Nitrat. Rubr.
Lapid. Calamin. Præparat. ää ℥jfs.
Lithargyr. Lævigat. ℥j.
Tutiæ Præparat. ℥fs.
Hydrargyr. Sulphurat. Rubr. ℈j–
Balsam. Peruvian. gutt. xv.
Adipis Suillæ ℥ij. M.

which might occasion irritation; for which reason the patient ought to be confined to a dark chamber, or, at least, he should wear a blind of green silk over the eye, to prevent too great a glare of light; and he ought likewise to abstain from all food of a heating or stimulating nature, and from a use of vinous and spirituous liquors.

In very severe cases, his diet should consist chiefly of some mild farinaceous decoction, which, while it allays thirst and supplies sufficient nourishment, tends both to moderate excitement and promote perspiration.

After the removal of ophthalmia it may sometimes be necessary to employ means to prevent its return, by continuing the use of blisters behind the ears, or the insertion of an issue. In some instances, however, it may be connected with a debilitated habit, and then the best means of preventing its return are those which tend to strengthen the vessels of the eye, or the system in general; and these will sometimes remove habitual ophthalmia when all others have failed.

One of the most powerful of these means is the cold bath, which may be employed either by immersing the whole body, or by washing the head in cold water once or twice a day. The application of cold water to the eyes themselves, or of any astringent collyrium, by means of an eye-cup, twice or thrice a day, may likewise be serviceable in preventing the return of ophthalmia, or removing it after it has become habitual. The bark and other tonics have also been resorted to with a good effect.

We are informed by Mr. Ware,* that he has had occasion to attend a considerable number of cases, in which an opacity of the crystalline humour was produced by some violence done to the eye; and in most of these, the opacity was dissipated, and the sight restored, during the external application of æther.

In using this remedy, he says, "sometimes I have diluted it with a third or fourth of a weak solution of hydrargyrus muriatus; but in general, I have used the æther alone, which has been applied by means of a camel's hair pencil to the eye itself. The application of the remedy occasions a very pungent pain in the eye, with considerable redness in the tunica conjunctiva; but these go off in a few minutes, and leave the eye as easy, and the conjunctiva as pale, as they were before the æther was used."

The principal remedy that has been productive of any good effect in the ophthalmia which has so universally prevailed among the British soldiers since the return of our troops from Egypt, and which from this circumstance has been named the Egyptian ophthalmia, is bleeding from the arm; but in order to insure its full power, it has been found necessary, Dr. Vetch tells us,† to carry the evacuation to a great extent, and with a freedom far beyond what we have been accustomed to recommend. In short, he says, that he found it absolutely necessary to draw off upwards of twenty ounces at a time, or

* See his Second Edition of Observations on the Cataract and Gutta Serena.
† See his Treatise on the Egyptian Ophthalmia.

rather to bleed the patient ad deliquium animi, and to repeat the operation to this extent pretty frequently.

With the liberal evacuation of blood from the system, and likewise from the eye itself, by the topical means before noticed under the head of Common acute Ophthalmia, the use of purgatives repeated every second or third day, with an appropriate antiphlogistic regimen should be conjoined.

In treating on common ophthalmia it has been recommended to make frequent scarifications on the ball of the eye, but perhaps it may be the better way to carry the lancet along the inside of the lower lid, parallel to its edge, and not far distant from it. Scarifications made in this way will be far preferable to pricking the eyelid repeatedly in quick succession, as is sometimes practised. The issue of blood from the scarifications may be assisted by gently everting the lid with the end of the finger, and it will be more useful to take off the finger occasionally, and then to apply it again, and thus renew the eversion, than to continue the finger steadily on the lid.

Whilst by large and sudden evacuations of blood from the system, as well as from the affected eye, we lessen the violence of the disease, and prevent either an opacity of the crystalline lens, or a rupture of the cornea from ensuing; we are, at the same time, to moderate the external symptoms and lessen the secretion by local applications—linen cloths dipped in some cooling lotion (see those before prescribed) should therefore be kept constantly to the eye, or eyes, if both are affected, and such applications as experience seems to have accommodated to the different stages of the diseases ought to be carefully dropt in the eye. The best appear to be the aq. lithargyr. acet. properly diluted solutions of alum, or vitriolated zinc, or the camphorated collyrium prescribed below,* or before mentioned.

When we consider, however, that the morbid mucus is confined between the swelled conjunctiva that lines the eyelids and that part of it which covers the globe of the eye, it must be evident that in order to bring the matter effectually away, the lotion must be propelled over the eye with some degree of force, and this cannot be better effected than by the use of a small blunt-pointed syringe, by means of which the medicated liquor may be conveyed over the whole surface of the eye, and the retained matter be each time entirely cleared away. The injection ought to be repeated at least once an hour during the height of the disease; but when the violence of the inflammation has abated, and the quantity of the discharge is decreased, a longer period may be allowed to intervene between the times of applying it.

In those cases where the pain of the eye and tumefaction of the con-

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* ℞. Cupri Vitriolat.
Bol. Armen. āā gr. viij.
Camphoræ gr. ij. Misce, et affunde
Aq. Bullientis ℥viij.
Cùm lotio sit frigida effundatur liquor limpidus et sæpissime injiciatur paululum inter oculum et palpebras omni horâ.

junctiva are very considerable, it may be advisable not only to make the lotion of a weak standard, and to leave longer intervals between the times of employing it, but occasionally to interpose the injection of merely tepid water. Under the like circumstances the frequent application of hot water also, or of a warm decoction of poppy-heads, by means either of a flannel or of a large sponge, may likewise prove serviceable. During the inflammatory stage of the disease, and when the irritation is great, a warm poultice of bread and milk may be applied to the eye, renewing it frequently throughout the day. Possibly it might be of service to shave the head and keep cloths wetted with vinegar to it and the temples. In severe cases a blister on the neck might likewise prove useful.

The introduction of the vinous tincture of opium by a few drops at a time into the eye will have a very good effect when employed in the early stage of the disease.

Such are the means to be adopted in the treatment of this variety of ophthalmia. It sometimes happens, however, that, in spite of our utmost endeavours to subdue the inflammation, we cannot succeed, and that there is great danger of a rupture of the cornea taking place, and discoverable by the cornea losing its transparency, and a white ring forming round its circumference. In such cases, it will be highly advisable to evacuate the aqueous humour, by making a puncture with a common lancet into the anterior chamber of the eye.

This operation, it appears, has been performed in several instances with perfect safety and the highest advantage by Mr. Wardrop,* of Edinburgh, under the like circumstances; and he thinks it probable that the great and immediate relief afforded by it, arises chiefly from the sudden removal of tension.

Mr. Ware† coincides with Mr. Wardrop on the propriety of puncturing the cornea to evacuate the aqueous humour when a rupture of it is threatened, and he very properly observes, that by suffering this to happen spontaneously, it may take place in such a part of it as afterwards to impede the passage of light, but that when the opening is made by a surgeon, it may be done in such a place as to obviate any impediment of the kind.

Of OTITIS, or INFLAMMATION of the EAR.

INFLAMMATIONS of the ear are for the most part unaccompanied by pyrexia, although the sufferings of the patient are sometimes very great; but in some instances they are attended with fever, assume a formidable appearance, coma, delirium, and convulsions supervene, and even a fatal termination has been the consequence.

Otitis is produced by the same causes with other inflammations, but by none more readily than a partial exposure to cold.

In the treatment of this complaint we should proceed on the same principles as in that of ophthalmia. While it is merely a local affection,

* See vol. iii. of the Edinburgh Journal, p. 56.
† See his Remarks on purulent Ophthalmia.

local remedies alone are necessary, if we except cathartics for the purpose of dislodging the contents of the primæ viæ. Local blood-letting, the application of blisters behind the ear, and of warmth, are the means chiefly to be relied on.

If the pain does not abate, but, on the contrary, should continue to increase, we may expect a suppuration to ensue. This we may then encourage by the application of emollient poultices and warm vapour; and when the abscess bursts, or is opened, we may syringe the ear from time to time with some mucilaginous and gently astringent decoction.

When otitis is accompanied with universal pain diffused over the whole head, fever, delirium, or coma, the most powerful general means are to be combined with the local ones, as recommended in Phrenitis.

Suppuration is generally the consequence of these violent forms of the disease, and then the structure of the whole internal ear is often destroyed, the bones being discharged through the meatus auditorius with much purulent and fetid matter. In such cases the sense of hearing in the ear affected is wholly lost of course.

Fistulous ulcers of the internal ear are now and then the consequence of suppurations, and prove very troublesome.

Ear-ach sometimes continues many days without any apparent inflammation, and is then frequently removed by filling the ear with tincture of opium or æther, or even with warm oil, or warm water. Sometimes a pain in the ear is the consequence of association with a diseased tooth, in which case the æther should be applied to the cheek over the suspected tooth, or a grain of opium with a little camphor, be applied to the tooth itself.

Of the INFLAMMATORY SORE THROAT, or CYNANCHE TONSILLARIS.

In this complaint the inflammation principally occupies the glands, such as the tonsils; but it often extends through the whole mucous membrane of the fauces, so as essentially to interrupt the speech, respiration, and deglutition of the patient.

It is readily to be distinguished from cynanche maligna by the strength of the pulse, the greater difficulty of deglutition, the absence of ulcers in the throat, and the accompanying fever being inflammatory.

The causes which usually give rise to it are, exposure to cold, either from sudden vicissitudes of weather, from being placed in a partial current of air, wearing damp linen, sitting in wet rooms, or getting wet in the feet; all of which may give a sudden check to perspiration. It may also be occasioned by violent exertions of the voice, blowing wind instruments, acrid substances irritating the fauces, and by the suppression of accustomed evacuations. It principally attacks the youthful, and those of a full and plethoric habit, and is chiefly confined to cold climates, occuring usually in the spring and autumn; whereas the cynanche maligna chiefly attacks those of a weak irritable habit, and is most prevalent in warm climates. The former differs from the latter,

likewise, in not being contagious. In many people there seems to be a particular tendency to this disease, as from every considerable application of cold it is readily induced.

An inflammatory sore throat discovers itself by a difficulty of swallowing and breathing, accompanied by a redness and tumour in one or both tonsils, dryness of the throat, foulness of the tongue, lancinating pains in the parts affected, hoarseness of the voice, a frequent but difficult excretion of mucus, and some small degree of fever. As the disease advances, the difficulty of swallowing and breathing becomes greater, the speech is very indistinct, the dryness of the throat and thirst increase, the tongue swells, and is incrusted with a dark fur, and the pulse is full, hard, and frequent. In a few cases, small white sloughy spots are to be observed on the tonsils, and in very violent ones there is complete deafness. When the symptoms of cynanche are considerable, the whole face partakes of it, the eyes are inflamed, and the cheeks florid and swelled, respiration is performed with difficulty, and the patient is obliged to be supported in nearly an erect posture to prevent suffocation. Even delirium and coma sometimes supervene. If the inflammation proceeds to such a height as to put a total stop to respiration, the face will become livid, the pulse will sink, and the patient will quickly be destroyed.

The chief danger arising from this species of quinsy is, the inflammation occupying both tonsils, and proceeding to such a degree as to prevent a sufficient quantity of nourishment for the support of nature from being taken; or its occasioning suffocation: but this seldom happens, and its usual termination is either in resolution or suppuration. When proper steps are adopted early, it will in general readily go off by the former. Cynanche tonsillaris rarely terminates either in gangrene or scirrhus.

Little fever, free respiration, deglutition not much impeded, the inflammation being of a vivid red colour, universal but gentle diaphoresis and a copious ptyalism or moderate diarrhœa coming on about the fifth day, are to be regarded as symptoms which denote a termination of the disease in resolution.

When suppuration is likely to ensue, the parts affected become more pale and less painful, a sense of pulsation is felt in them, and there are slight rigors. If gangrene is to take place, the parts affected lose their red and shining colour, and from being tense and tumid, they become flaccid, brown, and livid; the pulse, from being strong, becomes small, weak, and irregular; the face assumes a cadaverous appearance; cold clammy sweats break out; the extremities are cold; coma, and symptoms of debility, make their appearance, and destroy the patient.

Where cynanche tonsillaris has proved fatal by suffocation, little more than a highly inflamed state of the parts affected, with some morbid phenomena in the head, have been observed on dissection.

In the treatment of this complaint, our first and chief endeavour should be to carry off the inflammation; for which reason an antiphlogistic plan must be pursued. If the inflammatory symptoms run high, twelve or fourteen ounces of blood (supposing the patient to be an adult)

ought to be drawn from the jugular vein, in preference to the arm; but if they do not, it will be sufficient to draw blood by the application of several leeches under the ears, particularly on the side most affected. Drawing blood from the tonsils by internal scarifications, is likewise a powerful remedy in this species of quinsy, and when employed with freedom on its first appearance, will greatly tend to prevent a suppuration from ensuing.

At the commencement of cynanche tonsillaris, and before the febrile symptoms are any way violent, the timely exhibition of an emetic often proves extremely useful, and now and then checks its complete formation.

To assist in removing the inflammatory diathesis, gentle evacuation from the intestines, by means of laxative medicines, should be advised occasionally. Saline cathartics, or calomel with jalap, may be most proper.

In those cases where the inflammation is considerable, the early application of a blister round the throat, or to the back of the neck, will most probably be attended with a good effect: but in slight cases, it will be sufficient to have these parts rubbed twice or thrice a day with some stimulating embrocation, such as the linimentum camphoræ vel ammoniæ, putting a piece of flannel round them afterwards.

In this complaint it is found of service to wash the mouth and fauces frequently with mild astringent gargles* somewhat acidulated, and likewise to scrape and cleanse the tongue from the fur which is apt to collect on it. Gargles composed of a few grains of the cerussa acetata have sometimes proved highly serviceable in abating the inflammation, when other remedies have failed; but from the general prejudice against the use of this preparation in the form of gargle, lest any of it should happen to be swallowed, it is seldom prescribed.

When white sloughy specks are observed on the tonsils, we may substitute the gargles advised in cynanche maligna for those mentioned here. If a tendency to gangrene should appear, we should immediately have recourse to those of an antiseptic nature, the best of which are composed of bark, myrrh, and Port wine, or of capsicum and vinegar. See Cynanche maligna.

Gargling is the best means of washing the internal fauces; but its motion is sometimes so painful or irksome, as to prevent the patient from having recourse to it. In such cases the medicine may be thrown into the fauces by means of a syringe.

Frequently inhaling the vapour arising from warm water mixed with

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* ℞. Conserv. Ros. Rubr. ℥jss.
Aq. Bullient. ℔ss.
Acid. Sulphuric. ℥j. M.
ft. Gargarismus.

Vel

℞. Decoct. Hordei ℥vj.
Mel. Rosæ ℥j.
Acid. Sulphuric. gutt. xxxv. M.

Vel

℞. Aluminis Purif. ℥j.
Decoct. Hordei ℔ss.
Mellis Rosæ ℥j. M.

Vel

℞. Infus. Rosæ ℥vj.
Tinct. Myrrh. ℥ss.
Mellis Commun. ℥j. M.

a little vinegar throughout the course of the day, will greatly assist the effects of gargles; and where a proper inhaler cannot be procured for the purpose, we must be content to substitute an inverted funnel.

When a febrile disposition prevails, it will be proper to employ diaphoretic medicines with the view of determining to the surface of the body. Any of those advised under the head of Simple Continued Fever may be used; and to increase their effect, the patient should take frequent small draughts of whey, barley-water, or any other diluting liquor. Neutral salts, as recommended under the same head, will likewise be proper medicines.

If our endeavours to resolve the inflammation have proved fruitless, and it seems likely to terminate in a suppuration, we ought then to hasten it by the frequent application of warm fomentations and emollient poultices to the throat, and by directing the patient to receive the vapour arising from warm milk and water into the fauces several times a day, in the manner before recommended.

Warm gargles composed of a decoction of figs and barley-water may also be employed, and the best way of using them will be to permit as large a quantity as can conveniently be retained to lie on the part till it cools to the temperature of the mouth. When the matter is formed, if the tumour does not break readily, a lancet may be applied to it.

During this stage of the disease, the passages to the stomach and lungs are sometimes so closed by the size and pressure of the tumour, as to endanger the life of the patient, either by suffocation, or the want of nourishment. In the first case, recourse should be had in proper time to the operation of bronchotomy, in order to keep up respiration; and in the last, the strength must be supported by nutritive and mucilaginous clysters, consisting of animal broths, thick gruel, arrow-root, barley-water, or a solution of starch, which should be thrown up the intestines in a small quantity at a time, as they will thereby be absorbed the more readily, and will not be so apt to pass off again, without affording any benefit.

Before we resort, however, to bronchotomy, it may be worthy of a trial to endeavour to break the tumour, either by exciting vomiting, or by making the patient receive, through an inhaler, the steams arising from warm water, to which a sufficient quantity of æther has been added. The stimulus will prove so great, as to succeed in many cases, particularly where the suppuration is nearly completed.

In cynanche tonsillaris every part of the antiphlogistic regimen is necessary, and should be more or less strictly enjoined according to the degree of general excitement. Even where this is not very considerable, all kinds of animal food and fermented liquors must be avoided, and the diet should be light and diluent, a large quantity even of the mildest solid food often increasing the affection of the fauces.

Of the MUMPS, or CYNANCHE PAROTIDÆA.

THIS disease chiefly affects children among the lower class of people; is often epidemic, and manifestly contagious.

It is distinguished by an external moveable swelling that arises most commonly on both sides of the neck, but in some instances it is confined to one. These tumours occupy the maxillary and parotid glands; are large, hard, and somewhat painful; and sometimes they attain to such a considerable size, as greatly to impede the powers of respiration and deglutition, giving rise thereby to pyrexia. The swelling usually continues to increase till the fourth day; but from that period it declines, and in a few days more goes off entirely, and then the febrile disposition likewise ceases. As the swelling of the fauces subsides, it not unfrequently happens that some tumour affects the testicles in the male sex, or the breasts in the female, but this generally goes away in a few days. Sometimes the tumour in the fauces becomes suddenly suppressed, and is not attended with the last-mentioned symptom, or if so, this is quickly repressed; in which case the fever becomes very considerable, is attended with delirium, and at length proves fatal.

There is, however, seldom much danger from this disease, except when symptoms of congestion in the brain or its membranes arise.

The mumps do not often require the assistance of medicine; and all that is in general requisite, is to keep the head and face warm, to avoid taking cold, and to open the bowels by the mildest cooling laxatives; but should the tumour in the neck suddenly disappear, and the febrile symptoms increase, so as to induce an apprehension that the brain will be affected, it will be advisable to promote and reproduce the swelling by warm fomentations and stimulating liniments;* and to obviate the fatal consequences that might ensue from its suddenly receding by means of venesection, nauseating doses of emetic medicines,† cathartics, and blisters, according to the violence of the disease.

When the testicles become affected and are much swelled, every endeavour should be exerted to prevent suppuration from ensuing, and we are therefore to have recourse to bleeding, both general and topical, cathartics, cooling and discutient applications, and a suspensory bag. Much the same means are to be adopted, when, on a retrocession of the tumour in the neck, the female breast becomes indurated and swelled.

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* ℞. Liniment. Ammoniæ ℥ı.
Tinct. Cantharid. gutt. xx. M.

Vel

℞. Spirit. Camphorat. ℥j.
Aq. Ammoniæ ʒij.
Tinct. Cantharid. ʒfs. M.
ft. Linimentum.

† ℞. Kali Nitrati ʒj.
Antim. Tartarisat. gr. ij. M.
Et in Chartulas No. vj. divid. quarum sumat unam 4tis horis.

Vel

℞. Hauft. Salin. ℥jfs.
Vini Antimon. gutt. xv.
Syrup. Cort. Aurant. ʒj.
ft. Hauftus 3tia quaque hora capiendus.

Of the PUTRID SORE THROAT, or CYNANCHE MALIGNA.

THE putrid sore throat is readily to be distinguished from the inflammatory quinsy by the soreness and white specks which appear in the fauces, together with the great debility of the system, a small fluttering pulse, and an eruption on the skin of the same nature with that of scarlatina, which are to be observed in the former; whereas in the latter there is always great difficulty of breathing, a considerable degree of tumour, with a tendency in the parts affected to suppurate, and a hard full pulse. Moreover, in the former disease, the inflammation is seated principally in the mucous membrane of the mouth and throat, and the accompanying fever is of the typhoid type; whereas in the latter, it chiefly occupies the glandular parts, and the fever is of the inflammatory kind.

The putrid sore throat often arises from a peculiar or humid state of the atmosphere, and so becomes epidemical, making its attacks chiefly on children, and those of a weak lax habit, principally about autumn and the beginning of winter. It is produced likewise by contagion, as it is found to run through a family, when it has once seized any person in it; and it proves often fatal, particularly to those in an infantile state. In some instances the symptoms of scarlatina and cynanche maligna are so blended together, that it is difficult to say of which disease they partake most; in a practical view, this is however of no importance.

Cynanche maligna usually makes its attack with cold shiverings, anxiety, nausea and vomiting, succeeded by heat, restlessness, thirst, debility, and oppression at the chest; the face looks flushed, the eyes are red, and a stiffness is perceived in the neck, with a hurried respiration, hoarseness of voice, and soreness in the throat; and upon viewing the internal fauces, there appears a fiery redness in every part, with some slight degree of swelling in the tonsils, which, however, is by no means so great as to impede either respiration or deglutition.

The inflammation, after a short time, takes a peculiar termination; for upon a further inspection into the throat, a number of sloughs of a shade between a light ash colour and a dark brown are to be observed on the tonsils, velum pendulum palati, and uvula; the breath is highly offensive; the tongue is covered with a thick brown fur; and the inside of the lips is beset with vesicles, containing an acrid matter, which falling on the corners of the mouth and other parts, occasions excoriations. With these symptoms there is likewise a coryza, which pours out a thin acrid matter, excoriating the nostrils. A purging often attends also, particularly in infants, and a thin acrid matter flows from the anus, excoriating this, and the neighbouring parts.

From the first attack of the complaint there is a considerable degree of fever, with a small, frequent, and irregular pulse; and every evening there occurs a manifest exacerbation, and in the morning some slight

remission, together with general loss of strength and debility. In some cases the brain is affected with delirium or coma.

About the second or third day, large patches of a dark red colour make their appearance about the face and neck, which by degrees become dispersed over every part of the body, even to the extremities of the fingers, which feel swelled and stiff. These eruptions, after continuing for about four days, depart without producing any remission of the symptoms.

The inflammation, as in the cynanche tonsillaris sometimes spreads along the eustachian tube to the internal ear, occasioning ulceration, and sometimes wholly destroying its structure. In other cases it extends to the parotid, maxillary, and other glands of the fauces, which become swelled and painful. The whole neck, indeed, sometimes swells, and assumes a dark red colour.

As the sloughs spread, they generally become of a darker colour, the interstices at the same time assuming a purple hue; new specks arise, and the whole internal fauces are at length covered with thick sloughs, which, when they fall off, discover ulcers sometimes very deeply seated.

In the worst cases, the fauces appear quite black, the sloughs corrode deeper and deeper, and spread throughout the whole of the alimentary tube, so as to terminate at last in gangrene; and the symptoms of irritation continuing to increase, together with a severe purging coming on, the patient is cut off; which event happens usually before the seventh day, and, in some cases, so early as on the third.

Where there is a great increase of the evening paroxysm of fever, with vast debility, depression or irregularity in the pulse, much fetor of breath, and a livid appearance in the ulcers, with a purging, petechiæ, or hemorrhage the disease, will certainly terminate fatally; but where the pulse becomes more moderate and stronger, the respiration freer, the skin soft and moist, the florid colour begins to return to the fauces, and a better matter to be discharged from the ulcers, with less acrimony in that which flows from the nares, we may expect a favourable termination. In slight cases, where the fever is of a less putrid nature and the symptoms are moderate, and where the appearance of the efflorescence is succeeded by a remission, and this remission of the fever increases daily in the progress of the disease, we need not be apprehensive of danger.

Cynanche maligna generally arrives at its height about the fifth or sixth day, and in cases which terminate favourably declines in five or six days. It has, however, been observed to run through its course more slowly in adults than in children.

It sometimes happens that cynanche maligna appears without any affection or efflorescence of the skin, in the same manner as we meet with the scarlatina without any ulceration in the throat: in general, however, the affections of the throat and skin are combined, and seem wonderfully influenced by the state of each other. But while the absence of the sore throat in scarlatina always denotes a favourable prog-

nosis, that of the eruption in cynanche maligna generally affords an unfavourable one.

The eruption in cynanche maligna is seldom uniformly diffused, but comes out in blotches or small points scattered over the trunk and extremities, which are rarely of a florid red, but of a dark purplish or livid hue, and which terminate in but a very scanty desquamation. As in other eruptive fevers, the eruption in this sometimes suddenly recedes, and an alarming train of symptoms arise. The patient becomes dropsical, the countenance assumes a cadaverous appearance, and convulsions supervene, which terminate in death. The same consequence has ensued on the eruption, suddenly assuming a very pale or livid appearance. A florid colour of the eruption, with a uniform diffusion of it over the body, and a copious desquamation, afford a favourable prognosis.

From dissections, it appears that in this disease the fauces are inflamed, suppurated, and gangrenous; and that the trachea and larynx are likewise in a state of inflammation, and lined with a viscid fetid matter. In many instances, the inflammatory affection extends to the lungs themselves. Large swellings of the lymphatic glands about the neck, occasioned by an absorption of the acrid matter poured out in the fauces, are now and then to be found. The same morbid appearances which are to be met with in typhus gravior present themselves in other parts of the body.

In the treatment of the putrid sore throat, we should abstain from all kinds of bleeding either topical or general, as it would infallibly prove injurious by increasing the irritability, and likewise the debility, which naturally are very great. The same precaution is necessary with respect to the employment of active purgatives, and we are sufficiently deterred indeed from the use of them, by observing that a diarrhœa arising even spontaneously, always does harm, and often proves fatal. The regular expulsion of the fæces is therefore to be solicited by clysters, or the most gentle aperients, and even these are only to be had recourse to when nature is defective. It has often happened in this complaint, that from a want of due attention to this precaution, a cathartic has been followed by a retrocession of the eruption, and a train of the most alarming symptoms. If active cathartics are ever admissible in cynanche maligna, they can only be so at its very commencement, or at the termination of those cases, where, although there is a healthy appearance in the throat, with an abatement of all the febrile symptoms, still the abdomen becomes swelled from a collection of putrid colluvies; or glandular obstructions are formed. In such instances, a few grains of calomel with rhubarb may be administered with caution.

At the commencement of the disease, it has been found of service to give a gentle emetic; wherefore a few grains of ipecacuanha may be taken. It will not fail to bring off a considerable quantity of acrid matter, which by getting into the bowels, might induce a diarrhœa; an affection to be avoided by every possible means, as always adding to debility, and endangering the life of the patient. At an advanced stage of the disorder, vomiting might be attended with bad consequences.

The grand objects to be kept in view in this malignant disease, should be, to check or counteract the septic tendency which prevails; to wash off from time to time the acrid matter from the fauces, and to obviate debility. Should any particular symptoms arise during its progress which may tend to aggravate it, such as diarrhœa, hemorrhage, &c. they ought to be immediately attended to.

In the year 1787, at which period I was in the West Indies, this disease prevailed in the island of Saint Christopher's, as a universal epidemic among children, and a vast number of them fell martyrs to it, in spite of the utmost endeavours of the profession to save them, when at last the most happy effects were derived from the use of a remedy, the basis of which was Cayenne pepper. The medicine was prepared by infusing two table-spoonfuls of this pepper and a tea-spoonful of salt, in half a pint of boiling water, adding thereto the same quantity of warm vinegar. After standing for about an hour, the liquor was strained through a fine cloth, and two table-spoonfuls were given every half hour.

The speedy and good effect produced by the use of this medicine in every case in which it was tried, evidently points out the utility of giving warm aromatics, which will bring on a timely separation of the sloughs, as well as other antiseptics, to correct the tendency in the parts to gangrene.

Since the period above mentioned, many practitioners have become vouchers for the very beneficial effects which were derived in various instances of cynanche maligna from this medicine. My own experience induces me to speak well of it also.

To assist the effect of the pepper remedy, it will be highly advisable to give the Peruvian bark at the same time in doses of, from two scruples, to a drachm, every two hours; and if the inflammatory symptoms do not run high, it may be mixed in a little Port wine. Should the stomach not be able to retain the powder, we may then substitute the extract or strong decoction or infusion of it, adding to each dose about two drachms of the tincture. If the least degree of diarrhœa is produced by a use of the bark, a few drops of the tincture of opium may be added to each dose.

With many children it may be impossible to prevail on them to take the bark in any form. In such cases, it ought to be administered in a clyster. Two drachms of the fine powder may be given in four or five ounces of barley-water, every three or four hours, to young children; and about half an ounce, in a proportionate quantity of the liquid, to those of eight or ten years of age. Should the first clyster come away too soon, one or two grains of opium may be added to the subsequent ones. The extract of cinchona may be employed in the same way.

In cynanche maligna, a junction of the muriatic acid with the bark, as advised under the head of Typhus Gravior, or of the oxygenated muriatic acid as noticed under that of Scariatina, will be very proper. Where we give these acids in considerable doses, it may be necessary to add a few drops of tinctura opii to each, in order to prevent any disagreeable effect on the stomach and bowels from ensuing.

To check the septic tendency in the parts, as well as to remove the acrid matter which is secreted, it will be necessary to wash out the fauces with some proper gargle,* making frequent use of the pepper remedy in the same manner; but as young children cannot be prevailed on to gargle, it ought to be injected into the mouth and throat with a syringe. After washing the parts in this manner, the steams arising from warm vinegar and water may be received into the fauces by means of an inhaler. Oxygen gas may also be inhaled.

Where there is any difficulty in inducing the patient to sit up in bed to inhale this gas, or we are not furnished with the necessary apparatus, we may substitute the following method, which perhaps may answer equally well. Cause the windows and doors of the person's apartment to be closed, and then taking a chafing-dish with some live coals, throw into it half an ounce of purified nitre in powder, which will fill the room with a thick white cloud, that will continue for a considerable time. This process ought frequently to be repeated in the course of the day.

Many judicious practitioners have thought that the greater fatality among children than adults, in such as have laboured under cynanche maligna, is in a great measure to be attributed to their swallowing the morbid secretion from the throat. This, beyond all doubt, induces vomiting, griping pains, and a purging of the worst kind, by causing the complaint to spread along the alimentary tube; and it is very frequently by these affections that children are destroyed. Possibly they might be prevented by removing the acrid matter from time to time by a small sponge fastened to the end of a quill or piece of wood; and by means of another sponge at the other end, the ulcerated fauces may be touched with the mixtures best calculated to promote their healing. This mode of proceeding will be the more necessary when gargling is not freely employed.

No force whatever is to be used for occasioning a separation of the sloughs; and if after a continuation of the gargles for some time, the sloughs should not begin to separate, all that can be done with safety is to touch them with a little alum, or the marine acid mixed with honey, &c. applied with a small piece of soft rag or hair pencil.

When any considerable degree of fever attends, and the skin is very dry, it may be advisable to give small and frequently repeated doses of some diaphoretic medicine; but as antimonials are apt to turn down-

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* ℞. Mel. Rosæ ℥j.
Decoct. Hordei ℥x.
Tinct. Myrrh. ℥ss.
Acet. Optim. ℥j. M.
ft. Gargarismus.
Vel
℞. Decoct. Cinchonæ ℥vj.
Acid. Muriat. ʒj.
Tinct. Aromat. ℥ss.
—— Myrrh. ℥j. M.
Vel
℞. Decoct. Hordei Compos. ℥xij. cui inter coquendum adde
Rad. Contrayerv. Contus. ℥ss Liquori colato admisce
Aceti Vin. Alb. ℥ij.
Tinct. Myrrh. ℥j.
Mel. Optim. ℥ss. M.
Vel
℞. Extract. Cinchon. ʒj.
Vini Rubr. Generos. ℥vj.
Acid. Sulphur. dilut. ʒj. M.

wards, and produce a purging, some caution will be necessary in administering them. To prevent this tendency, they may be combined with a small quantity of the aromatic confection.* Small doses of the pulv. ipecac. comp. will however be preferable to any antimonial. They may be given with the mistura camphorata.

Where cynanche maligna is conjoined with scarlatina, we may probably employ a solution of ammonia præparata in the proportion of two drachms to five ounces of water with some advantage, giving two teaspoonfuls every three or four hours, according to the urgency of the symptoms.

For the purpose of promoting perspiration, the pediluvium has frequently been used in this disease; but at an advanced stage its effects would be too debilitating; and at all periods, if the symptoms run high, the trouble attending its use would not be compensated by any good effects it might have. The pediluvium seems therefore advisable only in those cases where the efflorescence becomes very pale, or suddenly recedes.

Should a diarrhœa arise in the progress of the disease, immediate recourse must be had to some powerful astringent,† to which may be added a use of wine or brandy mulled up with spice. Every possible endeavour should be exerted to put an immediate stop to it, as in every period of the disease diarrhœa is a very dangerous symptom.

Violent vomiting arising in the course of the disease is to be appeased by the saline medicine in the effervescing state; by opiates joined with camphor, and by applying linen cloths wetted with tinctura opii to the region of the stomach.

It has been usual to apply blisters to the throat in this complaint, particularly when there is any considerable degree of tumour; but they are attended with some danger, as in a few instances where blisters were applied, I have observed white specks shortly to arise on the part, which, from the prevailing disposition to putrefaction, have soon degenerated into ulcerations, that have become gangrenous, and at length have destroyed the patient.

It may, however, be attended with a good effect to excite a slight degree of inflammation externally, by applying a cataplasm of mustard moistened with a small quantity of camphorated spirits, or by rubbing the parts with rubefacients, as in cynanche tonsillaris.

A suppression of urine sometimes arises in cynanche maligna, and then it is frequently a symptom of debility. In such cases the necessity of pushing as far as possible the invigorating plan is strongly indi-

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* ℞. Pulv. Antimonial. gr. ss.—j.
Confect. Aromat. ℈ss. M.
ft. Bolus tertia hora sumendus.
Vel
℞. Mistur. Camphorat. ℥ij.
Confect. Aromat. ʒss.
Vin. Antimon. gutt. xv.---xxv.
Aq. Cinnam. ℥iij. M. Capiat Cochl. magnum ʒtia quaque hora.

† ℞. Confect. Aromat. ʒj.
Mistur. Cretac. ℥iij.
Aq. Cinnam. ℥ij
Tinct. Opii gutt. xxx.---L.
——— Catechu ʒj. M.
ft. Mistura cujus sumat Cochl. magna ij. quartis horis.

cated. Emollient fomentations, or cold applications over the region of the bladder, are the most advisable means for removing this affection; and where the patient has been long costive, some mild clyster may be expedient. When the suppression continues obstinate, the assistance of a surgeon will be necessary to draw off the water with a catheter.

In the last or putrid stage of this complaint, it is not uncommon for a hemorrhage to break forth from the nose, mouth, or ears, which never proving critical, but, on the contrary, threatening the greatest danger, ought always to be immediately stopped, if possible, by administering strong antiseptics internally, as advised under the head of Malignant Fever, and by the external application of tents dipped in some powerful styptic, such as a solution of cuprum vitriolatum.*

Through the whole course of the disease the patient is to be supported with a sufficient quantity of liquid vegetable nutriment, such as gruel, barley-water, and preparations of tapioca, Indian arrow-root, rice, sago, and panado; and his ordinary drink may consist of wine-whey, or Port wine negus acidulated with orange-juice, or some other acid, either vegetable or mineral.

The quantity of wine allowed, must be in proportion to the age of the sick, the violence of the febrile symptoms, the degree of debility that exists, or the tendency that there is to putrescency.

The chamber should be kept sufficiently ventilated, and of a proper temperature, so as not to be too hot, nor at the same time to be so cool as to give any check to the perspiration, or efflorescence; and it may be sprinkled several times a day with warm vinegar, in which rosemary or some other aromatic herb has been infused. The greatest cleanliness is moreover to be observed in removing, as soon as possible, whatever is voided by stool; the linen ought frequently to be changed, and the mouth and throat be repeatedly washed and kept clean.

The putrid sore throat being highly contagious, especially among children, it will be prudent, on the first appearance of the disease, to separate the sick from the rest of the family; and in order to destroy the contagion, and render the attendants less susceptible of being infected, it may be advisable to fumigate with the nitric or muriatic acid, as advised under the head of Malignant Fever.

The capsicum medicine before mentioned has not only been used in the cure of cynanche maligna, but it has likewise been advised for the prevention of it. By giving the attendants of the sick, and others who may unavoidably be exposed to infection, a tea-spoonful or two every three hours, using it at the same time as a gargle, the preventive effect of the remedy is said to have proved certain. It seems to act by producing and keeping up a regular excitement in the tonsils, uvula, and fauces, and thereby enabling them to resist the sedative effects of the poison which is inhaled.

* ℞. Cupr. Vitriolat. ʒjss.
Aluminis ʒfs.
Aq. Puræ ℥vij.
Spirit. Vini ten. ℥j. M.
fs. Solutio.

Of the CROUP, or CYNANCHE TRACHEALIS.

THE croup is an inflammatory affection of the mucous membrane of the trachea and larynx, producing an exudation, which appears partly in a membranous crust, and partly in a fluid resembling pus, and attended, with a peculiar ringing sound of the voice, great difficulty of breathing, some degree of spasmodic affection, thirst, and other febrile symptoms.

The croup may be distinguished from the acute asthma by the following diagnostics. In the former, the cough is frequently ringing in our ears, whereas in the latter there is little or no cough. In croup there is seldom any remission, whereas in the acute asthma it is one of the most striking phenomena of the disease, and it is attended with some evacuation, such as belching, vomiting, or purging. In croup, the pulse is strong, with much febrile heat; the urine high coloured, and the voice shrill and small: in acute asthma, the pulse, although perhaps equally quick, is less full, the urine is limpid, and the voice is croaking and deep.

The inflammation in the croup appears of a very peculiar and singular nature. If it was like that met with in common, we might expect to find the same kind of concretion on the surface of the trachea every day, as its mucous membrane is so frequently the seat of inflammation, attended with an increased secretion. The matter, however, of which this substance is formed, possesses different properties from those of the mucus which is thrown out upon the membrane of the nose, or of the trachea in common catarrhal affections. Some practitioners from thence have been induced to suppose, that the film which we find in the croup, is not formed by a secretion from the mucous glands, but is an exudation from the exhalant arteries, and that it is analogous to the inflammatory exudation from the inflammation of other internal membranes, first described by the late Dr. Hunter. Upon this principle, we can indeed more easily account for such a film not being found in common catarrhal affections, in which the mucous glands are, perhaps, more the seat of the disease.

The croup does not appear to be contagious, whatever a few physicians may think to the contrary, but it sometimes prevails epidemically. It seems, however, peculiar to some families; and a child having once been attacked, is very liable to its returns. It is likewise peculiar to children from the age of a year, to eight or ten, particularly the ruddy and robust, and has never been known to attack a person arrived at the age of puberty.

The application of cold seems to be the general cause which produces this disorder, and therefore it occurs more frequently in the winter and spring, than in the other seasons. It has been observed to be most prevalent near the sea-coast; but it is frequently met with in inland situations, and particularly those which are marshy. It is less known in the temperate than in the northern regions of Europe.

A day or two previous to an attack of the disease, the child appears drowsy, inactive, and fretful; the eyes are somewhat suffused and heavy, and there is a cough, which from the first has a peculiar shrill sound: this, in the course of two days, becomes more violent and troublesome, and likewise more shrill. Every fit of coughing agitates the patient very much; the face is flushed and swelled, the eyes are protuberant, a general tremor takes place, and there is a kind of convulsive endeavour to renew respiration at the close of each fit. As the disease advances, a constant difficulty of breathing prevails, accompanied with a swelling and inflammation in the tonsils, uvula, and velum pendulum palati, and the head is thrown back in the agony of attempting to escape suffocation. There is not only an unusual sound produced by the cough, but respiration is performed with a hissing noise, as if the trachea was closed up by some light spongy substance. The cough is generally dry; but if any thing is spit up, it has either a purulent appearance, or seems to consist of films resembling portions of a membrane. Where great nausea and frequent retchings prevail, coagulated matter of the same nature is brought up. With these symptoms there is much thirst, an uneasy sense of heat over the whole body, a continual inclination to change from place to place, great restlessness, and frequency of the pulse.

In an advanced stage of the disease respiration becomes more stridulous, and is performed with still greater difficulty and some degree of spasmodic affection, being repeated at longer periods, and with greater exertions, until at last it ceases entirely.

The croup frequently proves fatal by suffocation, induced either by spasm affecting the glottis, or by a quantity of matter blocking up the bronchiæ; but when it terminates in health it is by a resolution of the inflammation, by a cessation of the spasms, and by a free expectoration of the matter exuding from the trachea, or of the crusts formed there. The unfavourable symptoms are, considerable difficulty of breathing, great anxiety, violent fever, no expectoration, and the voice becoming more shrill.

The disease has, in a few instances, terminated fatally within twenty-four or thirty hours after its attack; but it more usually happens, that where it proves fatal, it runs on to the fourth or fifth day. Where considerable portions of the membranous film formed on the surface of the trachea, are thrown up, life is sometimes protracted for a day or two longer than would otherwise have happened.

Dissections of children who have died of the croup, have always shewn a preternatural membrane of considerable tenacity lining the whole internal surface of the upper part of the trachea, which may always be easily separated from the proper membrane. There is likewise usually found a good deal of mucus, with a mixture of pus, in the trachea and its ramifications.

From the appearances on dissection, and the symptoms which attend the disease, there can be no doubt, but that it is inflammatory during its first stage, and spasmodic in its last; the treatment ought therefore

to be managed accordingly. The first thing to be done, should be, to take away blood, either from the jugular vein or arm, but a preference is due to the former, proportioning the quantity to the age and habit of the child, and continuing it so as nearly to produce fainting, where the difficulty of breathing is great. Should the symptoms not mitigate from the bleeding, or should they return after a little time, more blood ought to be drawn, by applying several leeches immediately over the trachea; but previous general bleeding should never be omitted in any case. In very young children, it may often be difficult to procure blood from the arm, owing to the smallness of the veins. In such cases it may be drawn from the hands and feet, putting them first into warm water.

The use of the lancet has indeed been deprecated by a few practitioners; and the tinctura opii, in doses proportionate to the violence of the symptoms, recommended as being likely to give relief as speedily as venesection, or any other remedy. Judging from my own practice and experience, I think bleeding, with other antiphlogistic remedies, ought never to be neglected in the first stage of the disease.

Immediately after bleeding we should give an emetic, so as to produce sufficient vomiting, by which a considerable quantity of ropy mucus will be brought off, to the great relief of the child; and so powerful is the effect of this remedy, that it sometimes suddenly removes the disease without having recourse to other means. If the first emetic does not relieve the cough and difficulty of breathing, it may be necessary to repeat it. Where we have reason to suspect a lodgment of lymph or mucus in the trachea, as happens in almost every instance, exciting vomiting twice or thrice a day* will indeed be highly advisable.

In all cases of the croup, the child should be kept nearly upright in bed, to guard against suffocation.

At the same time that we adopt bleeding and vomiting, it will be found advantageous to apply a large blister to the chest or throat. If applied to the former, the external fauces may be anointed with a little of the linimentum camphoræ with the addition of a few drops of the tincture of cantharides, or we may use the linimentum ammoniæ fortius.

Throughout the whole course of the disease, an antiphlogistic regimen will be necessary; and if the body is costive, it should be kept open by the frequent administration of some purgative.

Brisk purgatives (in which calomel† may be an ingredient,) when the bowels are inactive, are obviously proper.

To assist the expectoration, and promote a determination to the surface of the body, we may employ antimonials. I generally give a preference to the solution of tartarised antimony, administered every two or three hours in such doses as to excite a constant nausea. To

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* ℞. Antimon. Tartarisat. gr. ij.
Aq. Puræ ℥ij.
Oxymel. Scillæ ℥fs. M.
Capiat Cochl. unum minimum subinde ad vomitum promovendum.

† ℞. Calomelanos gr. iij.
Pulv. Jalapii gr. iv.—viij. M.
ft. Pulvis cathartic.

increase the effect of this medicine, the warm bath may be used. Possibly pectorals of the attenuating class* might be serviceable.

After bleeding, vomiting, and purging, opium will be likely to prove highly useful, particularly when the inflammatory symptoms have abated and the disease seems almost entirely spasmodic; but we should give at least six or eight drops of the tincture every two hours, until sleep, or a remission of spasm, takes place: it may be combined with the antimonial solution.

Inhaling the vapour arising from warm water with a small addition of æther, may possibly prove a good auxiliary, both in lessening the violence of the spasms, and assisting expectoration.

Some cases of this disorder have been successfully treated with the digitalis.† In these, the tincture was employed in the dose of five drops, repeated every four hours. Its good effects would appear to depend partly upon its operating quickly and powerfully on the arterial system, and thereby stopping the rapidity of the inflammatory symptoms, and partly on its allaying the spasmodic irritation. I have myself employed it in two or three cases of croup, and with much seeming advantage, but I always premised general as well as local bleedings.

Rubbing the child's chest from time to time with a liniment composed of equal parts of the tincture of opium and æther, may, I conceive, prove useful in the spasmodic stage of the disease.

From the report of some authors we should be induced to suppose, that the croup was a disease of long duration and easy management; as by one we are informed that mercury, employed so as to produce a salivation, effectually cures it; another is confident of the success of a lotion made with spiritus ætheris vitriolici compositus; and a third places his reliance on a decoction of seneka; but such is the celerity of the dangerous symptoms, that few practitioners have, I think, witnessed a recovery from the croup, where an extravasation of coagulable lymph within the trachea and bronchial tubes had taken place in a high degree.

In some mild cases of the disease, calomel has been indeed employed on the recommendation of Dr. Rush, with some seeming advantage; but as the relief we obtain is always in proportion to the quantity of mucus brought up, it would appear, that we should never neglect exciting frequent vomiting, by means of tinctura scillæ, vin. ipecacuanhæ, or a solution of tartarised antimony, in order to have recourse to mercury.

Dr. Hamilton, Professor of Midwifery in the university of Edinburgh, is a strong advocate for the use of calomel in the croup. He

† See Med. and Phys. Journ. vol. iv. p. 20.

* ℞. Lactis Ammon. ℥ſs.
Oxymel. Scillæ ℥jſs.
Vin. Antimonii gutt. xv.
Tinct. Opii Camph. ℥ſs. M.
ft. Hauſtus ter die ſumendus.

Vel

℞ Decoct. Hord. C. ℥iv.
Nitri Purif. ʒſs.
Antimon. Tartariſat. gr. j.
Oxymel. Scillæ ʒij.
Tinct. Opii Camph ℥jſs. M.
ft. Miſtura, cujus ſumat Cochl. larg. j. ſæpe per diem.

tells us‡ that in every case where he has administered it previous to the occurrence of lividness of the lips and other mortal symptoms, he has completely succeeded in curing the disease. His mode of employing it is to give a dose of from one to five grains, according to the age of the child, every hour, till the breathing is evidently relieved; when it is to be gradually discontinued, allowing at first, two, then three, and finally, four or five hours to intervene between each dose, according to the state of the symptoms.

Calomel in moderate doses may be a good remedy in the croup, but the Professor's free mode of using it is more likely, I think, to shorten life than to prolong it.

The operation of bronchotomy has been proposed as a last resource, in those cases which threaten suffocation; but from the appearances on dissection, it does not seem that success would attend it; for although the upper part of the hardened membranous substance might be extracted by the forceps, still we should not be able to remove the fluid portion, which fills the lower part of the trachea and bronchiæ, and which is one of the chief obstacles to respiration.

Of INFLAMMATION of the PHARYNX, or CYNANCHE PHARYNGÆA.

THIS differs from Cynanche Tonsillaris only in the seat of the inflammation.

It is of the same nature, is produced by the same causes, and requires a similar treatment.

Of PLEURISY, or PLEURITIS.

PLEURISY is an inflammation of the membrane lining and enveloping the lungs, attended with an acute pain in the side, impeded respiration, fever, and a full, quick, and hard pulse. In some instances the inflammation is partial, or affects one place in particular, which is commonly on the right side; but in general a morbid affection is communicated throughout its whole extent.

The disease is occasioned by exposure to cold, and by all the causes which usually give rise to other inflammatory complaints; and it attacks chiefly those of a vigorous constitution and plethoric habit. In consequence of the previous inflammation, it is apt, at its departure, to leave behind a thickening of the pleura, or adhesions to the ribs and intercostal muscles, which either lay the foundation of future pneumonic complaints, or render the patient more susceptible of the changes in the state of the atmosphere, than before.

It comes on with an acute pain in the side, which is much aggravated on making a full inspiration, and is accompanied by flushing in the face, increased heat over the whole body, rigors, difficulty of lying on the side affected, together with a cough and nausea; and the pulse is hard,

‡ See his Treatise on the Management of Children in early Infancy.

strong, and frequent, and vibrates under the finger when pressed upon, not unlike the tense string of a musical instrument. If blood is drawn, and allowed to stand for a short time, it will exhibit a thick sizy or buffy coat on its surface.

If the disease is neglected at its onset, and the inflammation proceeds with great violence and rapidity, the lungs themselves become affected, the passage of the blood through them is stopped, and the patient is suffocated; or, from a combination of the two affections, the inflammation proceeds on to suppuration, and an abscess is formed.

The prognostic in pleurisy must be drawn from the severity of the symptoms. If the fever and inflammation have run high, and the pain should cease suddenly, with a change of countenance and a sinking of the pulse, great danger may be apprehended; but if the heat and other febrile symptoms abate gradually, if respiration is performed with greater ease and less pain, and a free and copious expectoration ensues, a speedy recovery may be expected.

The appearances on dissection are much the same as those mentioned under the head of Peripneumony; viz. an inflamed state of the pleura connected with the lungs, having its surface crowded with red vessels, and a layer of coagulable lymph lying upon it: adhesions too of the substance of the lungs to the pleura. Besides these, the lungs themselves are often found in an inflamed state, with an extravasation either of blood or coagulable lymph in their substance. Tubercles and abscesses are likewise frequently met with.

In the treatment of pleurisy our chief attention must be directed to the removal of the inflammation, by copious bleedings from the system at an early period of the complaint, taking the pulse for a guide, and giving the age and constitution of the patient proper consideration. While the pulse remains full, hard, and obstructed, the pain in the side acute, the breathing difficult, and the blood continues to exhibit a sizy crust on its surface, so long ought we to repeat the operation, with this exception, that, after a free expectoration has commenced, it will be injurious.

Here it is proper to mention that physicians have been struck at all times with the effect produced, by taking the blood from a large orifice* in inflammatory diseases; and it is certainly a step which cannot be too strongly urged, but more particularly in pleuritis and pneumonia. It is true, that from a small orifice an equal quantity of blood may be taken, as from a large one; but the time of its flowing is so long, that the topical inflammation, which demands for its relief a sudden effect upon the system, is not much influenced by it, though the general strength is greatly reduced, which is an occurrence to be avoided as much as possible, in a disease that requires repeated evacuations.

From the well-known power which the digitalis possesses of diminishing the action of the heart and arteries, it possibly may be employed in pleuritis with some advantage after copious general bleedings.

To allay the pain in the side, and take off the inflammation internally,

* See Dr. Fordyce's Fourth Dissertation on Fever, p. 50.

it will likewise be advisable to apply a large blister immediately over the part affected; and to prevent the coming on of a strangury, the patient should be directed to drink plentifully of barley-water, in which a small quantity of gum arabic has been dissolved. If it heals up too quickly, and the pain is not relieved by the first, a fresh one ought to be applied as near to the former as possible.

Where the pain is trifling, or the patient cannot be persuaded to submit to the application of a blister, flannel cloths wrung out in a warm decoction of emollient herbs, or bladders containing warm water, may be applied in its stead.

In pleurisy the application of cold on or near the part affected has been used with a salutary effect. Nitre, as being a powerful refrigerant, is likely to be a useful medicine in pleurisy as well as in peripneumony. It may be given in doses of ten grains, repeated every three or four hours.

As strong purgatives are found to determine the flow of blood to internal parts, they are improper remedies to be used in pleurisy; and therefore when it is found necessary to obviate costiveness on the first attack of the disease, it will be best to do it by means of gentle laxatives, such as the neutral salts, manna, or an infusion of senna, and the body may afterwards be kept open by emollient clysters, administered so as to procure one or two stools daily.

An early use of diaphoretics, particularly those of the antimonial class (as prescribed under the head of Simple Continued Fever,) will be very proper in the cure of pleurisy; as they not only determine the circulation to the surface of the body, but will likewise greatly assist in promoting an expectoration. They ought, however, to be given in such small doses as not to excite vomiting (which might be attended with bad consequences,) and to be repeated every two or three hours. To assist their operation, the patient should take frequent small draughts of some tepid liquor, such as barley-water, or herb-tea.

The pediluvium, or semicupium, frequently repeated, might prove good auxiliaries.

A free expectoration being the mean which nature usually adopts to relieve herself of this inflammation, it ought therefore to be encouraged by every possible method, such as inhaling the steams arising from warm water and milk, or from a decoction of emollient herbs, and giving mucilaginous * and oily † medicines frequently throughout the course

* ℞. Mucilag. Gum. Arab. ℥iv.
Aq. Fontan. ℥ij.
Nitr. Purific. ʒj.
Vin. Antimon. gutt. xxx.
Syrup. Limon. ℥j. M.
ft. Miſtura cujus fumat Cochl. ij. pro dos ſubinde vel tuſſe urgenti.

† ℞. Ol. Oliv. Optim. ℥j.
Mucil. Gum. Arab. ℥iv.
Oxymel. Scillæ ʒiij.
Ammoniæ ℈j.
Aq. Pulegii ℥ij. M.
ft. Miſtura.
Vel
℞. Ol. Amygdal. Dulc. ℥j.
Syrup. Althææ ʒij.
Mucilag. G. Arab. ℥j.
Aq. Fontan. ℥iij.
—— Ammon. ʒſs. M.
ft. Miſtura.

of the day, as here advised, or recommended under the head of Peripneumony. These will likewise serve to sheathe the throat, and other parts, from the acrimonious mucus, which is thrown out, and which provokes frequent fits of coughing.

As opiates evidently tend to give a check to expectoration, they ought, if possible, to be avoided; but if it is absolutely necessary to have recourse to them, by the patient being exhausted from the want of sleep, they may then be given, joined with some diaphoretic.*

Throughout the whole course of the disease the patient is to abstain from animal food, and from all kinds of fermented and spirituous liquors, supporting his strength with gruel, sago, preparations of barley, and such-like vegetable productions. On his recovery, he is carefully to guard against any fresh exposure to cold, as a return of the complaint might be attended with worse consequences than the first attack.

Of PERIPNEUMONY, or PNEUMONIA.

A PERIPNEUMONY, or inflammation of the lungs, is denoted by a difficulty of breathing, obtuse pain in some part of the chest, cough, a frequent full pulse, vibrating under the finger, like the tense string of a musical instrument, white tongue, high-coloured urine, and other symptoms of inflammatory fever. The disease is divided into the true and spurious peripneumony. When it arises from sizy blood obstructing the vessels of the lungs, it is called by the former appellation; and when it proceeds from a thick viscid matter, producing a similar effect, it is known by the name of the latter. Pneumonia is sometimes met with as supervening on typhus gravior, and then appears under a different character from its usual one.

The most general cause of peripneumony is, the application of cold to the body, which gives a check to the perspiration, and determines a great flow of blood to the lungs. It attacks principally those of a robust constitution and plethoric habit, and occurs most frequently in the winter season, and spring of the year; but it may arise in either of the other seasons, when there are sudden vicissitudes from heat to cold.

Other causes, such as violent exertions in singing, speaking, or playing on wind instruments, by producing an increased action of the lungs, have been known to occasion peripneumony. Severe exercise, external injuries, a free indulgence in the use of fermented liquors, repelled eruptions, suppressed evacuations, and metastasis from other

* ℞. Aq. Ammon. Acetat. ℥ss,
—— Menth. Sativ. ℥j.
Vin. Antimon. gutt. xxx.
Spirit. Æther. Nitros. gutt. xx.
Tinct. Opii gutt. xl.
Syrup. Althææ ʒij. M.
ft. Hauſtus hora decubitus sumendus.

diseases, such as gout, rheumatism, &c. may also give rise to it. Those who have laboured under a former attack of this complaint, are much predisposed to returns of it.

The true peripneumony comes on with an obtuse pain in the chest or side, great difficulty of breathing (particularly in a recumbent position, or when lying on the side affected,) together with a cough, dryness of the skin, heat, anxiety, flushing of the face, and thirst. At the first commencement of the disease, the pulse is usually full, strong, hard, and frequent; but in an advanced stage it is commonly weak, soft, and often irregular. In the beginning the cough is frequently dry, and without expectoration; but in some cases it is moist even from the first, and the matter spit up is various both in colour and consistence, being often streaked with blood.

If relief is not afforded in time, and the inflammation proceeds with such violence as to endanger suffocation, the vessels of the neck will become turgid and swelled; the face will alter to a purple colour; an effusion of blood will take place into the cellular substance of the lungs, so as to impede the circulation through that organ, and the patient will soon be deprived of life.

Should these violent symptoms not arise, and the proper means for carrying off the inflammation have either been neglected, or have proved ineffectual, although adopted at an early period of the disease, a suppuration may ensue, which event is to be known by frequent slight shiverings; by an abatement of the pain, and sense of fulness in the part; by the patient being able to lie on the side which was affected, with greater ease than before; by a remission of the previous febrile symptoms and accession of hectic, and by the respiration being less painful but more oppressed. Sometimes lymph is effused into the cavity of the chest, and gives rise to hydrothorax; at others, adhesions to the ribs are formed.

When peripneumony proves fatal, it is generally by an effusion of blood taking place into the cellular texture of the lungs, so as to occasion suffocation, which usually happens between the third and seventh day; but it may likewise prove fatal, by terminating either in suppuration or gangrene.

In those cases where it goes off by resolution, some very evident evacuation always attends it, such as a great flow of urine, with a copious sediment, diarrhœa, a sweat diffused over the whole body, or a hemorrhage from the nose; but the evacuation which most frequently terminates the complaint, and which does it with the greatest effect, is a free and copious expectoration of a thick white or yellow mucus, slightly streaked with blood; and by this the disease is carried off in the course of twelve or fourteen days.

Our opinion as to the event is to be drawn from the symptoms which are present. A high degree of fever, attended with delirium, much difficulty of breathing, acute pain, a dry cough, or an expectoration of a dark black colour, sudden cessation of pain, followed by a change of countenance, and a sinking or irregularity of the pulse, denote great danger: on the contrary, an abatement of the febrile symptoms, and of

the difficulty of breathing, and pain, taking place on the coming on of a free expectoration, or the happening of any other critical evacuation, such as a hemorrhage from the nose, diarrhœa, or free diaphoresis, the urine at the same time depositing a copious sediment, promise fair for the recovery of the patient. When the inflammation terminates either in suppuration, or an effusion of lymph, it is always to be considered as dangerous.

On dissection, the lungs usually appear inflamed, and there is often found an extravasation either of blood or of coagulable lymph in their cellular substance. The same appearances likewise present themselves in the cavity of the thorax, and within the pericardium. The pleura, connected with the lungs, is also in an inflamed state, having its surface every where crowded with red vessels. Besides these, abscesses are frequently found in the substance of the lungs, as likewise tubercles and adhesions to the ribs are formed. A quantity of purulent matter is often discovered also in the bronchiæ.

As in many cases of peripneumony the patient is destroyed in the course of a few days by the passage of the blood through the lungs being obstructed, hemorrhage of blood ensuing, or the inflammation proceeding on rapidly to a suppuration, the antiphlogistic plan, in its most rigorous extent, ought to be adopted on the very first attack of the disease. A quantity of blood proportioned to the violence of the symptoms and the vigour of the person, should be drawn from the arm ; taking care to make the orifice large (see Pleurisy, page 117 ;) and if the difficulty of breathing and pain are not relieved while it flows, the bleeding should be continued until the patient seems likely to faint, as one copious evacuation will be far preferable to repeated small bleedings.

If the pain and difficulty of breathing continue violent, or return after a short interval (which they are very apt to do,) the bleeding may be repeated the succeeding or even on the same day, and a considerable quantity may again be drawn off ; but when the inflammatory disposition is trifling, and the difficulty of breathing and pain are not very great (the patient complaining perhaps only of a rawness and soreness in the throat,) it will not be necessary to have recourse to the operation a second or third time. It is according to the state of the symptoms, the effect produced, and the appearance which the blood puts on when allowed to cool, that bleedings are to be repeated, and the more early they are practised the more effectual they will prove. They will, however, be highly serviceable at any period of the disease, previous to the taking place of the expectoration, should they have been neglected at first ; but after this comes on in any considerable degree, it would be highly improper to bleed.

Where there has been a considerable lapse of time, and the patient is in a weak debilitated state, instead of repeating venesection a second or third time, we may apply several leeches to the chest immediately over the part which is most painful.

To diminish the action of the heart and arteries, it has been proposed in this disease, as well as in pleurisy, to administer the digitalis. In ad-

dition to early and copious bleeding, this remedy may, probably, have a good effect, but it ought never to be relied on alone. Where much systematic debility and pulmonic irritation prevail, with frequent coughing, difficult respiration, dry heated skin, and a rapid hard pulse, notwithstanding we have bled freely in the early stage of the disease, we may then give the foxglove, either in the form of powder or tincture. About half a grain of the former, or from fifteen to twenty drops of the latter, may be administered every four hours.

Inflaming the skin immediately over the part affected with pain, by the application of a large blister, is another proper step to be adopted after bleeding; and should it shew a disposition to heal up soon, a fresh one ought to be applied in the vicinity of the other, so as to keep up a constant effect; which mode of proceeding will be far preferable to keeping the blistered parts open with any kind of stimulating ointment, as is often practised.

Emollient fomentations and cataplasms are sometimes made use of, but they evidently interfere with the application of a more powerful remedy, as a blister cannot be kept on at the same time that they are employed.

A free expectoration being the means which nature most usually adopts for carrying off the inflammation, we ought, therefore, to promote it as much as possible, by giving such medicines as are supposed to have a power of promoting a secretion from the glands of the throat, and bronchiæ; and likewise such as will serve to alleviate the cough, by sheathing the parts against that acrimony of the mucus which gives rise to it. It may be at the option of the practitioner to use any of the forms mentioned below,* or to substitute those advised under the head of Pleurisy.—To assist their effect, as well as to relax the vessels of the lungs, it will be right to recommend the steams arising from a warm infusion of emollient herbs, such as marshmallow, chamomile-flowers, &c. with an addition of vinegar, to be inhaled repeatedly throughout the course of the day. Few auxiliary remedies have proved more efficacious in this disease, than the steam of warm water impregnated with vinegar, and copiously inhaled by means of Dr. Mudge's machine.

A common objection made by patients to take medicines containing spermaceti, is, that, in the usual way of preparing them, the mixture

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* ℞. Sevi Ceti ʒij.
Vitell. Ovi q. s. ad solut. et adde
Ac. Pulegii ʒiv.
Nitri Purif. ʒj.
Oxymel. Scillæ ʒiij. M.
ft. Miſtura.
Cochl. ij. pro dos. ſubinde vel tusse urgenti.

Vel

℞. Mucilag. Gum Arab. ʒv.
Syrup. Limon. ʒj.
Tinct. Tolutan. ʒſs. M.
ft. Miſtura.

Vel

℞. Gum. Ammon. ʒj. Solve in
Aq. Puleg. ʒiv. et adde
Acet. Scillæ ʒiij.
Syrup. Tolutan. ʒſs. M.
ft. Miſtura.

Vel

℞. Ol. Amygdal. Dulc.
Syrup. Tolutan. āā ʒj.
Spermaceti (Gum. Arab. permixt.) ʒij.
Conſerv. Cynosbat. ʒſs. M.
ft. Linctus de quo ſæpius lambat æger.

is not smooth and uniform. It has been found, that by first melting the spermaceti, and pouring it into a mortar which has been previously warmed, then adding a sufficient quantity of the yolk of eggs, and afterwards the water, this inconvenience is entirely avoided, and that much less time is required than in the usual way of preparing it.

With the view of assisting expectoration, and determining to the surface of the body, we may give antimonials in small nauseating doses, taking care, however, not to excite any vomiting. With these medicines,* it will be proper to direct the patient to take frequent small draughts of some mild diluent liquor, such as barley-water, or thin gruel, to which may be added a little lemon-juice, so as to give it a pleasing acidity.

Nitre, and some other neutral salts†, will likewise produce a good effect in peripneumony, as well as antimonials, and may therefore be given.

Making use of a pediluvium every evening, might probably be attended with much benefit.

If the bowels require evacuation in the course of the disease, strong purgatives ought not to be employed; but gentle laxatives of a cooling nature, and emollient clysters, should be used. It is nearly an universal opinion that purgatives are not proper remedies in pneumonic affections; that drastic ones ought not to be administered, is very obvious; but nevertheless we are not to neglect giving those of a mild nature, such as an infusion of senna, a solution of vitriolated magnesia, or those prescribed below.‡

At the commencement of pneumonic inflammation opiates would evidently prove injurious by interrupting expectoration, and therefore they should not be prescribed in this stage of the disease, unless the cough proves so troublesome, as to exhaust the patient from the want of rest; or at least, until previous bleeding and blistering have somewhat relieved the difficulty of breathing and pain. In a more advanced stage of peripneumony, where a cough is the only urgent symptom, and

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* ℞. Pulv. Antimonial. gr. ij.
Conserv. Rosæ gr. xij. M.
ft. Bolus 3tia hora sumendus.
Vel
℞. Pul. Jacob. Ver. gr. iv. pro dos.
Vel
℞. Antimon. Tartarisat. gr. ij.
Aq. Fontan. ℥vijſs.
Syrup. Rosæ ℥ſs. M.
ft. Mist. cujus sumat Cochl. magna ij. tertia vel quarta hora.

† ℞. Succ. Limon. ℥jſs.
Kal. Præparat. ℥j.
Aq. Menth. Sativ. ℥j.
—Fontan. ℥iij.
Nitr. Purific. ℥j.
Syrup. Tolutan. ℥ſs. M.
ft. Mistura cujus sumat Cochl. iij. pro dos.
Vel
℞. Aq. Ammon. Acetat. ℥iij.
— Puræ ℥x.
Nitri Purif. gr. vj.—x.
Vini Antimon. gutt. x.
Syrup. Althææ ℥j. M.
ft. Hauſtus quartis horis sumendus.

‡ ℞. Mannæ Optim. ℥ſs.
Kal. Tartarisat. ℥iij.
Aq. Fervent. ℥ij. M.
ft. Hauſtus.
Vel
℞. Ol. Ricini ℥j. pro dos.

proves the chief cause either of the continuance of the pain, or of the want of sleep, opiates will prove highly useful, and may therefore be given, combined with the pectoral medicines before advised, or in the form of a draught* to be taken about bed-time.

During the whole of the complaint the patient should be confined to bed, lying with his head and shoulders as much elevated as possible; his chamber is to be kept of a proper temperature, and his strength supported with food of a light nutritive nature. His drink should be thin gruel and barley-water, sweetened with honey, or a decoction of liquorice, in which a small portion of currant-jelly is dissolved, to give it a pleasing tartness. On recovering, he should carefully guard against any exposure to cold, or any irregularity which might occasion a relapse; for no inflammation is so apt to recur, as the pneumonic, and a return of it might lay the foundation of phthisis pulmonalis.

If in consequence of the violence of the disease, an effusion of lymph takes place, and hydrothorax ensues, the means advised under this head must be employed. If suppuration is the termination, and we cannot evacuate the matter in any other way than by having recourse to the operation of paracentesis, this should be performed rather than suffer the patient to die, without some effort being made to save him.

In the putrid pneumonia, which, as before observed, sometimes supervenes on typhus gravior, the general plan of treatment should be a combination of that of typhus with the local treatment of pneumonia.—Bleeding from the system would certainly prove injurious; and where the debility has been great, there are instances on record, in which even topical blood-letting by means of scarifications of the side in this complaint has become so obstinate and profuse, as to baffle every attempt to stop it, till the patient expired. Dry cupping, together with fomentations, cataplasms, and rubefacient liniments applied over the part, will be far more advisable, the person at the same time drawing in with the breath watery vapours repeatedly throughout the day and night, by means of an inhaler. When there is considerable tendency to gangrene and hemorrhagies, blisters would be improper, both on account of the evacuation which they occasion, and because they sometimes gives rise to gangrenous sores.

In this disease every thing that might derange the primæ viæ should be guarded against. The presence of noxious matter in these passages often has, however, a share in producing the putrid pneumonia; and in such cases, clearing the alimentary canal ought to form an essential part of the treatment; but as the operation of cathartics would be too debilitating, and it seems very generally admitted that the chief cause of irritation is in most instances lodged in the stomach, it would appear that an emetic will be the best means of removing it. To avoid ex-

* R. Aq. Ammon. Acet. ℥iij.
—Menth. Sativ. ℥j.
Tinct. Opii gutt. lx.
Syrup. Tolutan. ℥ij.
Vin. Antimon. gutt. xx. M
fe. Haustus.

citing purging, instead of vomiting, which would be certain to prove prejudicial, we should prescribe ipecacuanha in preference to any antimonial emetic.

When the skin is very dry and hot, saline draughts, or the aqua ammoniæ acetatæ, may be administered with advantage. To allay pain, ease the cough, stop diarrhœa when it arises, or procure sleep, we may employ opium.

To support the vital powers, and resist the tendency to putrescency, it will be right in all cases of this species of pneumonia to allow a moderate use of wine, proportioning the quantity to the degree of debility which is present. If the inflammatory symptoms do not run high, and the fever shews any tendency to remit, we may add a joint use of the bark of cinchona.

When we have succeeded in removing the symptoms of putrid pneumonia, it will be necessary to have recourse to bitters and aromatics, in order to strengthen the stomach and system in general.

Of SPURIOUS PERIPNEUMONY, or PERIPNEUMONIA NOTHA.

THIS disease commonly makes its attack on those who are somewhat advanced in life, especially such as are of a phlegmatic habit, or who have had frequent catarrhal affections; and, like the other species of peripneumony, is occasioned by cold, being most prevalent in the autumn and spring, or when there are frequent vicissitudes of the weather from heat to cold.

It comes on usually with alternate chills and heats, flushing in the face, pain and giddiness in the head, a sense of lassitude over the whole body, difficulty of breathing great oppression at the chest, with obscure pains there, together with a cough, accompanied by some degree of expectoration, and often with the throwing up of a considerable quantity of viscid mucus.

Spurious peripneumony is sometimes so slight as to resemble only a violent catarrh, and, after the employment of a few proper remedies, goes off by a free and copious expectoration; but sometimes the symptoms run high, an effusion of serum into the bronchiæ takes place, which destroys the patient.

If advice is applied for at an early period of the disease, and there is great difficulty of breathing, with much pain, it will be proper to bleed, in order to facilitate the circulation of the blood through the lungs; but where these do not prevail, we need not have recourse to the lancet, for much harm may be done by inducing a considerable degree of debility unnecessarily, as the disease principally attacks elderly people, and such as are of a phlegmatic habit.

To relieve the difficulty of breathing, and oppression at the chest, it will be advisable to apply a large blister immediately over the part affected, after which, if there is any nausea present, we may prescribe a gentle emetic; but if there is not, we may be content with giving small doses of antimonials, as advised in the true peripneumony, to procure a

perspiration; and in order to keep up a constant effect, they should be repeated every two or three hours; the patient drinking plentifully at the same time of tepid liquors.

These means having been adopted, we ought then to give pectoral medicines combined with squills, as recommended under the head just mentioned.

If costiveness arises in the course of the disease, it must be removed by emollient clysters, or gentle laxatives, such as manna, crystals of tartar, &c. taking care to avoid strong purgatives, which would be hurtful, by inducing a state of debility.

Throughout the whole course of the disease, an antiphlogistic regimen will be most proper. Where great debility prevails, or the patient has long been accustomed to a free use of fermented liquors, a small quantity of wine will be admissible.

Considering Bronchitis as only a milder species of pneumonic inflammation, and requiring somewhat of a similar treatment, I have not thought it necessary to notice it under a distinct head; but a late writer* has looked upon it as deserving of a separate investigation.

With respect to Carditis, or inflammation of the heart; Pericarditis, or inflammation of the pericardium; and Diaphragmitis, or inflammation of the diaphragm; they are on many occasions scarcely to be distinguished from pneumonia, and probably are usually combined with it. Happily the treatment which has been recommended in this, is equally suited to these inflammations, with this difference, however, that as the parts affected are immediately necessary to life, the means of cure must be employed with promptness and diligence.

Of an INFLAMMATION of the STOMACH, or GASTRITIS.

THIS disease is divided into two species; the phlegmonous and erysipelatous: but it is the former which is here to be treated of, the latter arising chiefly towards the close of other diseases, marking the certain approach to dissolution, and being unaccompanied with any marks of general inflammation, or by any burning pain in the stomach.

Phlegmonous gastritis is produced by acrid substances of various kinds, such as arsenic, corrosive sublimate, &c. taken into the stomach, as likewise by food of an improper nature, by potations of spirituous liquors, by taking large draughts of any cold liquor when the body is much heated by exercise, dancing, &c.: and by repelled exanthemata and gout. Besides these, it may arise from an inflammation of some of the neighbouring parts extending to the stomach.

This species of gastritis is readily to be distinguished from any other disease, by the burning pain, heat and tension in the region of the stomach; by the aggravation of that pain when any thing is swallowed.

* See the Treatise on Bronchitis by Dr. Badham.

with the immediate rejection of it; and by the sudden and greater depression of strength in this than in any other inflammation. Indeed enteritis is the only disease it can be confounded with; and from this it may easily be discerned by the seat of pain or pressure with the hand.

The symptoms which attend it are, a violent burning pain in the region of the stomach, with great soreness, distention, and flatulency, a severe vomiting, especially after any thing is swallowed, whether it be liquid or solid, most distressing thirst, restlessness, anxiety, and a continual tossing of the body, with great debility, constant watching, and a quick, hard, and contracted pulse. In some cases a severe purging attends.

If the disease increases in violence, symptoms of irritation then ensue; there is great loss of strength, with faintings, a short and interrupted respiration, cold clammy sweats, hiccups, coldness of the extremities, an intermitting pulse, and the patient is soon cut off.

The event of gastritis is seldom favourable, as the person is usually, either suddenly destroyed by the violence of the inflammation, or else it terminates in suppuration, ulceration, or gangrene. Perhaps it may sometimes occasion scirrhosity of the pylorus.

If the symptoms are very mild, and proper medicines have been employed at an early period of the disease, it may, however, terminate in resolution, and that in the course of the first, or at farthest, the second week. The pulse becoming more soft and full about the fourth day, and diminishing in frequency; the pain gradually ceasing; the urine depositing a sediment; or diarrhœa supervening; are to be regarded as favourable symptoms.

Its termination in suppuration may be known by the symptoms, although moderate, exceeding the continuance of eight or ten days, and a remission of pain occurring, whilst a sense of weight and anxiety still remain; and on the formation of an abscess, cold shiverings ensue, with marked exacerbations in the evening, which are followed by night sweats, and other symptoms of hectic fever; and these at length prove fatal, unless the pus is thrown up by vomiting, and the ulcer heals.

Its tendency to gangrene may be dreaded from the violence of its symptoms not yielding to proper remedies early in the disease, and when begun, it may be known by the sudden cessation of the pain; by the pulse continuing its frequency, but becoming weaker; and by delirium, with other marks of increasing debility, ensuing.

In consequence of previous inflammation, a scirrhosity of the pylorus is sometimes induced, but unfortunately we know of no symptoms which are characteristic of it. When it has ulcerated and formed what is called cancer, there is generally an eructation of very fetid air, and a frequent vomiting of a dark-coloured mucus, which is offensive. The pain is constant, though varying in degree: it is increased by taking any acrid or acid substances into the stomach; whereas mild fluids, such as milk, gruel, &c. occasion little or no uneasiness; and this circumstance may help to distinguish it from that pain which is occasioned by mere distention, for there the pain equally follows, whatever is the food taken.

Fatal cases of this disease shew, on dissection, a considerable redness on the inner coat of the stomach, having a layer of coagulable lymph lin-

ing its surface. They likewise exhibit a partial thickening of the substance of the organ at the inflamed part, the inflamation seldom extending over the whole of it. Where ulceration has taken place, the ulcers sometimes are found to penetrate through all its coats, and sometimes only through one or two of them.

The cure of gastritis is to be attempted by copious and repeated bleedings employed at an early period of the disease, not regarding, or being intimidated by the smallness of the pulse, as it usually becomes softer and fuller after the operation. After venesection, topical bleeding by means of several leeches over the stomach, or scarifying and cupping, may also be immediately adopted. A large blister may next be applied to the region of the stomach, and the cure be assisted by fomentations of the whole abdomen, as well as by the frequent administration of emollient and laxative clysters. A warm bath will prove highly beneficial. Pediluvia may also be used.

The irritable state of the stomach prevents any kind of medicine from being received into it; and it is only after the violence of pain and the frequency of vomiting are somewhat abated, that we can venture to administer opiates, even in the form of clysters.

To sheathe the stomach, particularly in those cases where the inflammation has been occasioned by any acrid matter received into it, we should advise the patient to take frequent small draughts of some mild diluent drink, such as chicken-broth, linseed-tea, or barley-water, in which may be dissolved a small quantity of gum-arabic.

The other means recommended under the head of Mineral and Vegetable Poisons, may likewise be adopted according to the nature of the poison. When we cannot ascertain this, we may recommend a saline draught, in the act of effervescence, to be taken every two or three hours, particularly as long as the stomach continues in an irritable state. The acidulated soda water is also proper.

The tendency to suppuration is to be obviated by pursuing the steps which have been mentioned; and when it has actually taken place, must be left to nature, only avoiding all irritation. To allay pain and irritability of the stomach, opium may be administered in small doses. Mild farinaceous nourishment will be most proper.

A gangrene is likewise to be obviated by the means which have been advised. When it takes place, it admits of no relief from medicine.

Where either scirrhosity or cancerous ulceration of the pylorus has ensued, only a temporary relief can be expected. In the former, small doses of calomel conjoined with cicuta, together with a milk diet, may be most proper: in the latter, opium, cicuta, and hyoscyamus, with a similar diet, may be tried.

Of an INFLAMMATION of the INTESTINES, or ENTERITIS.

THIS, as well as gastritis, is of two species, viz. the phlegmonous and erysipelatous; the latter of which, arising only in consequence of some other disease, is not here to be noticed.

The only disease with which enteritis can be confounded, is colic; but from this it may readily be distinguished, as the former is accompanied with fever, and a quick and hard small pulse, and the pain is increased on pressure, which does not occur in colic.

The causes of enteritis are much the same with those of gastritis, being occasioned by acrid or irritating substances, indurated fæces, long-continued and obstinate costiveness, spasmodic colic, intus-susception, and a strangulation of any part of the intestinal canal; but another very general cause is the application of cold to the lower extremities, or to the belly itself. It is a disease which is most apt to occur at an advanced period of life, and is very liable to a relapse.

It comes on with an acute pain, extending in general over the whole of the abdomen, but more especially round the navel, which is greatly aggravated on pressure; accompanied with eructations, sickness at the stomach, a vomiting of bilious matter, obstinate costiveness, thirst, heat, great anxiety, and a quick and hard small pulse. After a short time the pain becomes more severe, the bowels are affected with spasms, the whole region of the abdomen is highly painful to the touch, and seems drawn together in lumpy contractions; invincible costiveness prevails, and the urine is voided with great difficulty and pain.

The inflammation continuing to proceed with violence, terminates at last in ulceration or gangrene; or it goes off by resolution.

Enteritis is always attended with considerable danger, as it often terminates in gangrene in the space of a few hours from its commencement: this event is marked by a sudden remission of pain, sinking of the pulse, shrinking of the features, suppression of urine, hiccup, and distention of the belly, which sounds, on being struck with the finger; and it frequently proves fatal likewise, during the inflammatory stage. If the pains abate gradually, if natural stools be passed, if a universal diaphoresis, attended with a firm equal pulse, comes on, or if a copious discharge of loaded urine, with the same kind of pulse, takes place, a resolution and favourable termination may be expected.

Its termination in ulceration, which is not common, can only be known by the febrile symptoms remitting; by occasional pains and rigors; and by pus being mixed with the evacuations from the bowels.

Dissections of this disease shew, that the inflammation pervades the intestinal tube to a very considerable extent; that adhesions of the diseased portion to contiguous parts are often formed; and that, in some cases, the intestines are in a gangrenous state, or that ulcerations have formed. They likewise shew, that, besides obstinate obstructions, intus-susception, constrictions, and twistings, are often to be met with; and

that, in most cases, the peritoneum is more or less affected, and is perceived, at times, to be covered with a layer of coagulable lymph. The mesentery and omentum are also found much inflamed.

On the first coming on of the disease it will be necessary to have recourse to copious bleeding, which may be repeated according to the severity and violence of the symptoms, and the age and strength of the patient. After plentiful venesection, topical bleeding by means of many leeches applied to the abdomen, will be advisable. These steps being taken, the body should be opened by some laxative* administered by the mouth, if the stomach is not in an irritable state; but if a frequent vomiting prevails, we must be content with substituting emollient clysters, often repeated; the effects of which may be forwarded by warm fomentations applied over the whole region of the abdomen. The application of a blister immediately over the part affected will also be advisable. When the violence of the symptoms abates, we may then venture to give some opening medicine, so as to procure a free passage.

The warm bath will be proper, but it ought not to supersede the use of blisters. A preference on such occasions must be given to the semicupium.

In enteritis attended with constipation, calomel given in the dose of ten or twenty grains after due venesection, is the most efficacious cathartic we can employ, and, if made into very small pills, is not likely to be rejected by vomiting, which generally attends the disease.

In the usual order of proceeding in cases of enteritis, purgative medicines are certainly essential to the plan of treatment; but bleeding, although considered as of the greatest importance, is not always employed so as to produce a powerful impression upon the system at large. Our attention should always be directed principally at first to the subduing of the inflammation by repeated large venesections on the very onset of the disease; by local bleedings; by the warm bath, and the application of a blister to the abdomen; and when we have effected this, we may then resort to purgatives, to remove the constipation. This latter being the effect, and not the cause of the disease, should not be the symptom first attended to.

It is, indeed, too much the custom to have recourse to active purgatives at the very commencement of enteritis, and this too in very considerable doses—a practice which cannot fail to prove highly prejudicial. The intention is to evacuate the bowels, but it should be considered that purgatives empty the intestinal canal by means of their specific stimulus, which increases the secretions, and quickens its peristaltic motion:

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* R. Ol. Ricini ℥j.
Aq. Menth. ℥fs.
Tinct. Jalap. ℥fs. M.
ft. Hauftus.

Vel

R. Mannæ Optim. ℥fs.
Natri Vitriolat. ℥vi.
Aq. Fervent. ℥ij. M.
ft. Hauftus.

Vel

R. Infus. Sennæ ℥jfs.
Kal. Tartarisat. ℥iij.
Tinct. Rhabarb. ℥j. M.
ft. Hauftus.

Vel

R. Magnes. Vitriolat. ℥j.
Aq. Menth. Pip. ℥iij M.
Capiat Cochl. larg. iij. omni hora donec alvus respondeat.

let it also be recollected, that the bowels are already excited to the utmost: that they are in, or at least tending to a state of high inflammation, and that no pathological fact is better ascertained than that excessive excitement destroys secretion; that by applying stimulants to an inflamed membrane, every secretion which it was wont to pour out, is locked up.

Whatever is given to the patient as aliment, should be of the most mild diluent nature, such as barley-water, beef-tea, and chicken-broth; and these ought to be taken sparingly and only in small quantities at a time, until some evacuation has been procured; as much food forced against the obstruction must necessarily increase the irritation, and of course aggravate all the symptoms. The strictest adherence to the antiphlogistic regimen must be enjoined.

Opiates are used by many practitioners in the early stage of this complaint, where the stomach is in a very irritable state, and much vomiting prevails; but it is obvious that they must prove injurious, and ought therefore not to be employed, at least not before sufficient evacuations by bleeding, as well as by laxatives, or emollient clysters, have been premised. Until the obstruction is removed by evacuations, the stimulus of opium might be likely to increase the action of the vessels, and produce a mortification of the intestines. When it is given by the mouth, it should always be joined with some aperient.*

When the disease is combined with, or has arisen in consequence of a strangulated hernia, intus-susception, or spasmodic colic, the means recommended under the head of the last of these complaints must be pursued.

The application of cold to the abdomen, either by means of pounded ice, linen cloths wetted in very cold water, or dashing this from a pail immediately over the belly, has sometimes succeeded in enteritis, when all other means have failed in removing the obstruction. Two severe cases of this nature have lately fallen under my care, but there was a considerable degree of spasmodic affection at the same time.

Of an INFLAMMATION of the LIVER, or HEPATITIS.

HEPATITIS has generally been considered of two kinds; the one acute, the other chronic: the former shewing the essential character of genuine inflammation; the latter exhibiting symptoms of less violence as to their inflammatory tendency, but an enlargement and hardness of the liver with an obtuse pain.

Besides the causes producing other inflammations, such as the application of cold, external injuries from contusions, blows, &c. this disease may be occasioned by certain passions of the mind, by violent exercise, by intense summer heats, by long-continued intermittent and

* ℞. Calomel. gr. v.
Extract. Colocynth. C. gr. iv.
Opii gr. j. M.
Fiant Pilulæ ij. pro dos.

remittent fevers, by an intemperate use of vinous and spirituous liquors, but more particularly the latter, and by various solid concretions in the substance of the liver. In warm climates this viscus is more apt to be affected with inflammation than any other part of the body, probably from the increased secretion of bile which takes place, when the blood is thrown on the internal parts by an exposure to cold; or from the bile becoming acrid, and thereby exciting an irritation in the part.

An inflammation of the liver and the diseases consequent thereon, are indeed affections more frequently to be met with in warm climates than in cold ones, particularly in the East Indies, where few Europeans can reside for any length of time without being attacked by them. The liver in that country seems to be the seat of disease, nearly in the same proportion that the lungs are in Great Britain.

The acute species of hepatitis comes on with a sense of chilliness preceding pain in the right hypochondrium, sometimes dull, sometimes sharp, extending up to the clavicle and shoulder, which is much increased by pressing upon the part, and is accompanied with a cough, oppression of breathing, and difficulty of lying, except on the side affected; together with nausea and sickness, and often with a vomiting of bilious matter; the intestines are generally inactive, and the stools shew a deficiency of biliary secretion, or at least of any intermixture of it with them; the urine is of a deep saffron colour, and small in quantity: there is loss of appetite, great thirst, and costiveness, with a strong, hard, and frequent pulse, of from 90 to 100 in a minute, and sometimes intermitting: the skin is hot and dry at the same time, and the tongue covered with a white, and sometimes a yellowish fur; and when the disease has continued for some days, the skin and eyes become tinged of a deep yellow, particularly when the inflammation is produced by calculi in the parenchema of the liver.

Both ancient and modern nosologists have made a distinction between the symptoms that occur when the inflammation occupies the convex surface of the liver, and those that are present when the disease affects the concave. It is said, when great difficulty of breathing, and cough, accompany the pain in the region of the liver, that these symptoms indicate the inflammation to be seated in the superior or convex part; but where the inflammation occupies the concave or inferior surface, which lies contiguous to the stomach and duodenum, there is more sickness and vomiting; and moreover, the pain is not so violent in the region of the organ as in the other instance.

My own observations during a practice of many years in the West Indies, where hepatitis is a disease of frequent occurrence, as well as in England, do not permit me to say that the symptoms which have just been pointed out, are so unequivocal as has been represented by nosologists.

It seems probable, says Dr. Cullen, that acute hepatitis is always an affection of the external membrane of the liver, and that the parenchematic is of the chronic kind.

The chronic species is usually accompanied with a morbid complexion, loss of appetite and flesh, costiveness, indigestion, flatulency, pains in

the stomach, a yellow tinge of the skin and eyes, clay-coloured stools, high-coloured urine, depositing a red sediment, and ropy mucus; an obtuse pain in the region of the liver, extending to the shoulder, together with some enlargement and hardness of the organ, and not unfrequently with a considerable degree of asthma, or at least assuming appearances similar to this disease. In some cases of chronic inflammation of the liver, the pulse has been observed to intermit, and probably induced either by the blood through the hepatic artery being obstructed by the scirrhosity; by an accumulation of it in the branches of the vena portarum; or by bile in the hepatic ducts.

These symptoms are, however, often so mild and insignificant, as to pass almost unnoticed, as large abscesses have been found in the liver upon dissection, which in the person's lifetime had created little or no inconvenience, and which we may presume to have been occasioned by some previous inflammation.

We may readily distinguish hepatitis from pneumonia by the pain in the former extending up into the shoulder; by the sallowness of the countenance; by the cough being unaccompanied by expectoration; and by the less degree of dyspnœa. The heat and pain not being increased upon taking any thing into the stomach, its being able to retain whatever liquids or medicines are thrown into it, without the immediate rejection of them, and the less prostration of strength, will distinguish it from gastritis. Hepatitis may be discerned from spasm on the gall-ducts, by there being no nausea; by the pain being permanent; by the pulse being 100 and upwards in a minute; and by the patient always preferring to keep the body in a straight quiescent posture; whereas the greatest ease, when there is spasm on the gall-ducts, is obtained by bending the body forward on the knees.

Hepatitis, like other inflammations, may end in resolution, suppuration, gangrene, or scirrhus; but its termination in gangrene is a rare occurrence. It is frequently accompanied with chronic obstruction. Its tendency to run into suppuration is not so great in this country as in warm climates. Indeed it is a rare occurrence here.

The disease is seldom attended with fatal consequences of an immediate nature, and is often carried off by a hemorrhage from the nose or hemorrhoidal vessels; and likewise by sweating, by a diarrhœa, or by an evacuation of urine, depositing a copious sediment. In a few instances it has been observed to cease on the appearance of erysipelas in some external part.

The most favourable signs are a gradual abatement of the pyrexial symptoms; an improvement in the complexion, the strength not much reduced by the remedies, return of the appetite, and an increase of the bulk of the body. Intensity of pain and fever, obstinate constipation, severe rigors succeeded by flushings, and hectic fever, denote suppuration. Continual hiccups, cold extremities, and sinking pulse, indicate gangrene.

When suppuration takes place (as it generally before this forms an adhesion with some neighbouring part, it is usually discharged by the different outlets with which this part is connected, as by coughing,

vomiting, or by the abscess breaking outwardly; but in some instances, the pus has been discharged into the cavity of the abdomen, where no such adhesion has been formed.

On dissection, the liver is often found much enlarged and hard to the touch, its colour is more of a deep purple than what is natural, and its membranes are more or less affected by inflammation. Dissections likewise shew that adhesions to the neighbouring parts often take place; and that large abscesses, containing a considerable quantity of pus, are often formed in its substance. Biliary calculi are now and then met with. In a few instances, the livers of those who have died of this disease have been found in a putrid state, resembling a honeycomb.

What constitutes some danger, and great difficulty, in managing hepatitis is, that in many cases the symptoms which are primary and indicative of inflammatory affection, are but very slightly marked, even when it is in such a degree as to run with readiness into suppuration, and particularly in the East and West Indies. The pain in the side is not constant or acute, the patient himself takes little notice of it, seldom mentions it unless he is asked about it, and when questioned concerning it, he only tells you, perhaps, that he has felt at times slight pains about the pit of the stomach, or in the right side. It is only by observing the secondary symptoms, such as a diarrhœa, or a short dry cough, and pain felt at the top of the shoulder, or that there is a degree of fulness or tenderness on pressing on the organ a little hard, with some yellowness of the eyes and countenance, that the true state and nature of the disorder is to be ascertained in such cases.

During the inflammatory stage of acute hepatitis it will be proper to adopt bleeding, proportioning the quantity which is taken away to the severity of the pain, and the degree of fever that is present; and repeating the operation very soon again if the symptoms run high. By neglecting to bleed under such circumstances, there will be danger of suppuration quickly ensuing. After venesection in due quantity, we should give proper doses of calomel, with jalap, or other cathartics.* These steps being taken, we may recommend warm fomentations to be applied over the part which is painful, renewing them as often as they become cold. In very severe cases, a warm bath may be advisable. The application of leeches or cupping will also be proper.

Some practitioners highly disapprove of bleeding from the system in this disorder, and recommend in its stead to draw blood from the neighbourhood of the part, by means either of leeches, or scarifications and cupping, which, perhaps, may be the preferable way in those cases which are unattended with much pain or pyrexia; but where these are present, copious and repeated venesection at an early period of the disease will be necessary. It will, however, be better to take away at

* ℞. Infus. Sennæ ℥ifs.
Magnes. Vitriolat. ℥iij.
Tinct. Sennæ.
Syrup. Roſæ ää ℥i. M.
ft. Hauſtus.

once, a quantity proportioned to the age and temperament of the patient, and the degree and extent of the disease, than by repeated small bleedings. It will be proper also, in bleeding, to make a large orifice, as physicians have been struck at all times with the effect produced by taking the blood from a large orifice † in inflammatory diseases.

If the symptoms do not abate in consequence of these means, a large blister applied over the region of the liver will be likely to prove serviceable. Should it be inclined to heal up too rapidly, or before the desired intention is obtained, a fresh one must be laid on. A succession of blisters will be far preferable to keeping open the first one with any kind of stimulating ointment. A saline draught‡ with a little nitre, taken every three or four hours, may have a very good effect.

In every case of acute hepatitis, the whole of the antiphlogistic plan is to be rigorously pursued, particularly where the symptoms run high and endanger a termination in suppuration; and therefore it will be understood that the intestines are to be kept perfectly open with gentle purgatives, such as solutions of the neutral salts, or calomel combined with jalap, or cathartic extract, administered from time to time. Emollient clysters may also be thrown up occasionally, for they will serve as internal fomentations.

As in other inflammatory complaints, we may excite a diaphoresis by means of nauseating doses of tartarised antimony, to which we may join nitre. The pediluvium, with a plentiful use of mild diluent and cooling liquids, will also be proper.

Towards the end of hepatitis, after repeated venesection and cathartics, an eruption sometimes appears round the lips, which is generally a salutary symptom; or perhaps an erysipelatous inflammation makes its appearance on some part of the body. In such cases, a decoction of the Peruvian bark given at this time, in the quantity of about two ounces every four or six hours, generally removes the remaining inflammatory tendency in a day or two.

When assistance has not been applied for in due time, or when the means which have been employed to carry off the inflammation have not been attended with the desired effect, and a suppuration has ensued, which is marked by preceding rigors, we must endeavour to promote the formation of proper pus, and the breaking of the abscess outwardly.

To effect the first of these intentions, the patient should be directed to take a drachm of Peruvian bark every two hours, making use of a nutritive generous diet at the same time, with a moderate quantity of wine, which course ought to be continued until the suppuration is completed; and to promote the second intention, a large emollient poultice

† See Dr. George Fordyce's Fourth Dissertation, p. 50.
——————————Fifth ditto, p. 15.

‡ R. Haust. Salin. ℥ss.
Nitri Purif. gr. x.—xv.
Antimon. Tartarisat. gr. i-6.
Syrup. Althææ ʒij. M.
ft. Haustus

should be kept constantly applied over the part, fomenting it well, twice or thrice a day, previous to this application.

When the tumour points outwardly, and has become soft, with evident fluctuation, we should open it in the most dependent part, taking care to prevent the wound from closing until all the matter is discharged. The opening may be made through the external teguments with a scalpel; and on reaching the abscess, it may either be touched with a lancet, or be pierced with a trocar, which appears to be the preferable way, as we shall thereby have it in our power to evacuate the matter slowly and gradually, which in large collections is a point of importance, and therefore ought to be attended to.

Abscesses in the liver sooner heal when opened, than similar affections in any other part of the body, and perhaps with less inconvenience; and therefore, in every instance, where we have good reason to suspect that matter has formed in this viscus, we may advise an opening to be made into the abscess, whether situated on the convex part of it, or not, in preference to suffering it to break inwardly, by which its contents would be evacuated into the abdomen, to the almost certain destruction of the patient.

From the putrescent tendency of the bile in warm climates, the bark has sometimes been employed on the first appearance of the disease; but no dependence can be placed upon it, when administered during the inflammatory stage. Where a suppuration has taken place, and during the time that the matter is discharging, it will certainly prove serviceable.

In acute hepatitis, if the pain and swelling do not give way to the antiphlogistic plan which has been advised, and the inflammation seems likely to terminate in an induration or scirrhosity, we should then have recourse to mercury. In almost every disease of the liver, mercury has indeed been regarded by some practitioners as a specific; but this leads, as Dr. Saunders very properly observes†, to an empirical practice, which may injure the reputation of an useful remedy. In the East and West Indies, where such an affection of the liver is frequently to be met with, mercury is much employed, and this often in an early stage of the complaint; but the most judicious physicians never exhibit it till all the inflammatory symptoms have been subdued by an antiphlogistic treatment. In India, indeed, the acute hepatitis is of rare occurrence; the chronic species of the disease is the one which there takes place most usually, being unaccompanied by either pyrexia or any sharp pain in the right side.

The most proper way of introducing mercury into the system will be, by rubbing in a small quantity of the ointment (perhaps about one drachm) in the neighbourhood of the part affected every night, until a slight degree of salivation is excited, or rather until some very obvious effect is produced on the constitution; by which means we shall in general be able to disperse the swelling and hardness. It will be advisable to rub the ointment on the side, in preference to any other part, because some advantage may possibly be derived from the mere friction.

† See his Treatise on Diseases of the Liver.

If rubbing in the mercury in the neighbourhood of the part is attended with any pain or inconvenience to the patient, the unction may then be applied to the groins, taking care however not to carry it much beyond the point bordering on salivation. With the view of assisting the discussion of the inflammation, and obviating any severe effects from the use of mercury, some gentle purgative, such as a solution of any neutral salt in an infusion of senna, may be taken every third or fourth morning.

A modern writer mentions* that it is by no means sufficient to render the mouth sore by mercury; it must be carried to the extent of producing a copious salivation, as the disease never yields till the saliva flows freely. In this opinion I believe he is singular.

Should we wish the mercurial action to be soon effected, we may employ mercury internally as well as externally, and to make its effect the more certain, we may join small doses of opium with it, administering them in the form of a pill †. If we find calomel not to answer our wishes, we should substitute the pilula ex hydrargyro, the patient taking one or two every night at bed-time, as may be judged necessary.

If the disease yields readily, a short course of mercury will be sufficient; but if not, its use ought to be continued for, perhaps, five or six weeks.

In that species of diseased liver which arises from an immoderate use of vinous or spirituous liquors, a mercurial course has been objected to by Dr. Trotter. In the tubercular or scirrhous liver, he tells us ‡, it had seldom appeared to him to be of any service, beyond its action in keeping the bowels open, when costiveness was to be guarded against. My own experience, however, does not lead me implicitly to adopt this conclusion: on the contrary, in more than one instance of incipient scirrhous liver, complicated with dropsy, I have seen mercury employed with advantage. Mercury, however, will not fail to prove injurious in those cases where the structure of this viscus is considerably destroyed.

We have been informed, that of late the nitric acid largely diluted with water and mucilage or syrup ||, has been used in the East Indies in chronical affections of the liver, and it is said with much benefit.

* See Medical Sketches, by James M'Gregor, M. D.

‡ See his Essay on Drunkenness, and its Effects on the human Body.

† ℞. Hydrargyr. Calcinat.
Opii
Camphoræ āā ʒj.
Syrup. Simpl. q. s. M.
ft. Massa in Pilulas æquales lx. distribuenda. Capiat j. vel ij. pro dos.

Vel

℞. Calomel. ʒj.
Opii Purif. ʒfs.
Antimon. Tartarisat. gr. v.
Syrup. Simpl q. s. M.
ft Massa in Pilul. lx. divid. j. mane et nocte quotidie sumenda.

|| ℞. Acid. Nitric. gutt. viij.—x.
Aq. Puræ ʒxij.
Syrup. Cort. Aurant. ʒij. M.
ft. Haustus ter quaterve die sumendus.

As an auxiliary remedy, it certainly may be employed with safety and advantage. Where the disease arises in a person of a scorbutic habit, there is no doubt that the use of mercury would be highly improper, as it would infallibly increase the symptoms, and hasten the fatal termination thereof; and in such cases, the nitric acid may be given with much advantage, as it will not only relieve the hepatic affection, but may likewise, in some degree, amend the scorbutic tendency.

In the treatment of chronic inflammation of the liver, great commendation has been bestowed upon the taraxacum (dandelion) by a modern writer,§ who tells us that he has seen the most decided advantage, both in incipient scirrhus of the liver, and also in several chronic derangements of the stomach, in the dose of half a drachm of the extract, twice a day. Either a strong decoction, or the fresh expressed juice, in doses from two ounces to four, two or three times within the twenty-four hours, will, however, be found more active preparations.

The diet best adapted for persons labouring under hepatitis, is such as is attenuant, nutritive, and easy of digestion; avoiding salted meats and greasy substances, as likewise all kinds of spirituous liquors. By degrees it may be improved by the addition of animal broths, &c. until health is perfectly restored. During the convalescent state, a course of stomachic bitters, such as cinchona, quassia, gentian, and columbo, will be proper. See these under the head of Dyspepsia. The patient may take any of these three times a day in the form of a draught, adding to each as much neutral salts as will procure daily one evacuation. A change of climate, from a warm to a colder, will be also useful; and the patient, moreover, will be likely to experience much benefit from the voyage and sea air.

The complicated diseases which are often brought on by a long residence in warm climates, affecting the secretion of bile, the functions of the stomach and alimentary canal, and which generally produce organic derangement in some part of the hepatic system, often receive much benefit from the Bath waters, if used at a time when suppurative inflammation is not actually present; and they will certainly prove a good auxiliary to other proper means.

Cheltenham water may also be taken with singular advantage by those who labour under any chronic affection of the liver, and this spring is indeed the resort of most of those who have had their biliary organs injured by a long residence in a warm climate. This water, besides containing salts of a purgative nature, is likewise a chalybeate, and the iron is suspended by carbonic acid, of which gas the water contains about an eighth. Its great efficacy, however, in chronic hepatitis, is owing to the gentle continued purging which it excites.

§ Dr. Robert Pemberton's Treatise on Diseases of the abdominal Viscera, p. 42.

Of an INFLAMMATION of the SPLEEN, or SPLENITIS.

THIS disease comes on with rigors succeeded by heat, thirst, and other febrile symptoms; soon after which an acute pain is felt in the left hypochondrium, that is much increased when pressed upon. In its other symptoms, it much resembles hepatitis. Like the liver, the spleen is often attacked with chronic inflammation, and then becomes indurated and enlarged.

The causes of the disease are most generally the same with those of other inflammatory diseases; but enlargements of the spleen are frequently the consequence of long-continued intermittents; and these, as well as indurations of the liver, are called ague-cakes. They arise, no doubt, from too great a determination of blood to these viscera during the several attacks of the cold fits.

With respect to the prognosis in splenitis, it need only be observed, that, like other inflammations, it may terminate either in resolution, suppuration, or scirrhus. Sometimes it is carried off by a vomiting of dark-coloured matter, resembling coffee-grounds; sometimes by a diarrhœa, and sometimes by a hemorrhage from the hemorrhoidal vessels. Where it terminates in suppuration, and the contents of the abscess are evacuated in the cavity of the abdomen, the event may prove fatal sooner or later; but a simple enlargement of it is often supported for many years without any very great inconvenience or hazard to the patient.

During the acute stage of splenitis we must adopt the antiphlogistic plan by general and topical bleedings, by purging frequently, and by the application of blisters over or near the part affected. If the inflammation should terminate in suppuration, the abscess is to be encouraged to discharge its contents externally, by fomentations and poultices. Where its termination is in scirrhus, we must employ mercury in the manner advised for the removal of chronic inflammation of the liver at an early period. The nitric acid may also be tried.

Of an INFLAMMATION of the KIDNEYS, or NEPHRITIS.

NEPHRITIS, properly considered, appears to be of two kinds; the one arising from the general causes of inflammation, and being seated principally in the external membrane of the kidney; the other occasioned by the stimulus of gravel or a stone in the pelvis of it, and the inflammation occupying the interior parts. It is, however, only the first of these that I mean here to investigate; the other will be noticed under the head of Calculus.

This species of inflammation may be distinguished from the colic, by the pain being seated very far back, and by the urine being of a deep red colour, voided frequently, and in small quantity at a time; and it

may be known from rheumatism, as in nephritis the pain is not much increased by motion of the body.

It is to be distinguished from a calculus in the kidney or ureter, by the symptoms of fever accompanying, or immediately following the attack of pain, and these continuing without any remarkable intermission; whereas in a calculus of the kidney or ureter, they do not occur until a considerable time after a violent pain has been felt. In the latter case too, a numbness of the thigh, and a retraction of the testicle, on the affected side usually take place, together with a constant nausea and vomiting.

Nephritis is to be distinguished from lumbago by the seat of the complaint, discovered upon pressure, by the dysuria and micturition, by its being frequently attended with vomiting, and by the pain extending along the course of the ureter, and not being much increased on motion, or by an erect posture.

The causes which give rise to this species of nephritis are, external contusions, strains of the back, acrids conveyed to the kidneys in the course of the circulation, violent and severe exercise either in riding or walking, and exposure to cold. In some habits there is an evident predisposition to this complaint, particularly the gouty; and in these there are often translations of the disease to the kidneys, which very much imitate nephritis.

An inflammation of the kidney is attended with a sharp pain on the affected side, extending along the course of the ureter, and there is a frequent desire to make urine, with much difficulty in passing it; the body is costive, the skin is dry and hot, the patient feels great uneasiness when he endeavours to walk or sit upright, he lies with the most ease on the affected side, and is incommoded with nausea and vomiting, and there are often costiveness and colic pains.

In forming an opinion as to the event, we are to draw our conclusion from the severity of the symptoms, and from the quantity and appearance of the urine which is voided. When the disease is protracted beyond the seventh or eighth day, and the patient feels an obtuse pain in the part, has frequent returns of chilliness, and shiverings, there is reason to apprehend that matter is forming in the kidney, and that a suppuration will ensue. Remission of pain, fever, and tension, followed by a copious secretion of high-coloured mucous urine, universal diaphoresis, or a flow of blood from the hemorrhoidal veins, are favourable symptoms.

Dissections of nephritis shew the usual effects of inflammation on the kidney, and they likewise often discover the formation of abscesses, which have destroyed its whole substance. In a few instances the kidney has been found in a scirrhous state.

On the first coming on of this complaint, a quantity of blood proportionable to the severity of the pain, and the age and habit of the patient, ought immediately to be taken away; and if the first bleeding does not afford considerable relief, the operation should be repeated on the same day, or on the next at farthest. Topical bleeding with several leeches will also be proper.

After bleeding, we may advise flannel cloths wrung out of a warm decoction of emollient herbs, or a bladder filled with warm water, to be kept constantly applied over the part which is painful; and by way of internal fomentation, an emollient clyster may frequently be injected. The patient is at the same time to be directed to drink plentifully of mild diluent liquids, such as barley-water, linseed or marsh-mallow tea, &c.

Nitre is a good antiphlogistic medicine in most internal inflammations; but in nephritis its use has been supposed to be very doubtful, on account of its passing quickly by the kidneys, and irritating them.

The intestines are to be emptied by gentle purgatives* employed as frequently as the occasion may require, in addition to emollient clysters.

Should these means have been adopted without affording relief to the patient, he ought then to be put frequently into a warm bath, continuing him in it for about ten minutes each time.

Mild diaphoretics, such as the saline medicine combined with nauseating doses of tartarised antimony, will at the same time be proper.

When the febrile symptoms do not run high, and the inflammation has greatly subsided, opiates may be used occasionally to soothe pain, and may be added to the clysters.

In nephritis the application of blisters would be improper. They are apt to affect the urinary organs and vessels, and to occasion much irritation, and would consequently increase the inflammation. Sprinkling the surface of blisters with camphor is said to prevent any irritation of the kidneys; but never having observed such an effect, I will not pretend to attest its efficacy. Rubefacient liniments over the region of the kidney may perhaps be of some service.

It has been mentioned that a difficulty of making water is one of the symptoms attendant on this disease: to obviate it, some practitioners give heating diuretics, such as turpentines, balsams, &c. The practice seems very improper, and ought not to be followed, as it will be more advisable to apply warm fomentations over the region of the bladder and kidney, to inject emollient clysters with an addition of opium, and to make the patient drink frequently of warm diluent liquids, as linseed-tea, decoction of althæa-root, barley-water, &c.

A decoction of the dried leaves of the peach tree (Amygdala Persica Linn.) prepared as mentioned under the head of Hematuria, and drank in the quantity of a pint a day, has been found a very useful remedy in many cases of nephritis.

When the urine deposits a quantity of muco-purulent matter, shewing that the inflammation has terminated in a suppuration, or that an ulcer has already formed in the kidney, balsamics and detergent medicines,

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* ℞. Mannæ Optim. ℥vj.
Kal. Tartarisat. ℥iij.
Aq. Fervent. ℥ij.
Tinct. Sennæ ℥j. M.
ft. Haustus.

Vel

℞. Ol. Ricini ℥j.
Mucil. Gum. Arab.
Aquæ Fœnicul. āā ℥fs.
Tinct. Jalap. gutt. xxx. M.
ft. Haustus.

with a long continued course of chalybeate waters, but more particularly those of the Bristol Wells, will be very proper. The Peruvian bark may also prove serviceable.

One of the best medicines, however, with which I am acquainted in such cases, is the uva ursi, which may be given in doses of half a drachm, or a drachm, three times a day. I have tried it in several instances, and in general with a happy effect.

Where an inflammation of the kidney has arisen from the stimulus of a stone or large piece of gravel lodged there, we should have recourse to the additional means advised under these particular heads.

In nephritis every kind of food which is of a stimulating nature ought carefully to be avoided, and such only as is lenient and nutritive should be used; as every thing which is heating or acrid proves a stimulus to the kidneys. Emollient and thin liquors should be drank plentifully, and the patient should take frequent small draughts of them notwithstanding the vomiting, as nothing so safely abates the inflammation, after proper evacuation by bleeding, as copious dilution.

Those who are liable to frequent returns of the disease, or to obstructions in the kidneys, ought carefully to avoid getting wet in the feet, as likewise all exposures to cold; they ought to lie on a mattress in preference to a feather-bed; their exercise should be moderate, and they should use no kind of wine which abounds with tartar.

Of an INFLAMMATION of the BLADDER, or CYSTITIS.

TENSION and pain over the pubes, with a frequent desire of making water, difficulty in voiding it, or a total suppression, together with tenesmus and pyrexia, mark this disease.

It is seldom a primary affection, but arises in consequence of inflammation in the neighbouring parts. It is sometimes, however, occasioned by a suppression of urine and consequent over-distention of the bladder, or by a stone of considerable size lodged in it.

The treatment advised in nephritis, or in ischuria and dysuria, will be proper here, except that we should not give liquids in great quantities, lest we distend the bladder beyond what it is capable of bearing.

In consequence of previous inflammation from some exciting cause, the mucous membrane of the bladder now and then becomes thickened, indurated, or ulcerated; and a considerable quantity of mucus, or pus, passes off with the urine, giving to it the appearance of whey, and now and then blood is discharged.

In the treatment of such cases, we are to prevent any collection of fæces in the rectum by means of some cooling laxative taken from time to time; to allay irritation in the organ by injecting into it now and then some emollient decoction by means of a vesicæ lotura, and to abate pain by small doses of opium. Some of the detergent balsams, such as the

copaiba Canadensis, &c. may likewise be advisable. Where we have reason to suspect scirrhosity, cicuta, or hyoscyamus, will be proper medicines in addition to the former.*

Of the GOUT, or ARTHRITIS.

In this disease there appears to take place a morbid action of a peculiar or specific nature.

The gout is a very painful disease, preceded usually by flatulency and indigestion, and accompanied by fever, pains and inflammation in the joints of the hands and feet, particularly in that of the great toe, and which returns by paroxysms, occurring chiefly in the spring and beginning of winter. In many habits it deposits a concrete saline substance on the parts which it affects, and is sometimes accumulated in considerable quantities, particularly on the joints of the fingers.

Of the gout there are four species or varieties: the regular, atonic, misplaced, and retrocedent.

The only disorder for which gout can possibly be mistaken is the rheumatism, and cases may occur wherein there may be some difficulty in making a just discrimination; but the most certain way of distinguishing them will be to give due consideration to the predisposition in the habit, the symptoms which have preceded, the parts affected, the recurrences of the disease, and its connexion with the other parts of the system; which circumstances are usually different in the two diseases.

In the gout, the pains generally attack the small joints, and are at the same time less inclined to shift: but when they do, they usually seize the corresponding limb, or some of the viscera; the parts are more red and swollen than in rheumatism, and the dyspeptic symptoms which rarely precede rheumatism, are present in a considerable degree for some days preceding the taking-place of a fit.

Attacks of gout are much confined to the male sex, particularly those of a corpulent and full habit of body; but every now and then we meet with instances of it in robust females. Those who are employed in constant bodily labour, or who live much upon vegetable food, as likewise those who make no use of wine, or other fermented liquors, are not often afflicted with gout.

The disease seldom appears at an earlier period of life than from five-and-thirty to forty, and when it does, may be presumed to arise from an hereditary disposition.

Indolence, inactivity, too free a use of tartarous wines, and other fermented liquors, and animal food highly seasoned, are the principal causes which give rise to the gout.

* Peritonitis, or Inflammation of the Peritonæum; and Hyfteritis, or Inflammation of the Uterus; as occuring moftly to women after delivery, are placed among the diseases of the puerperal ftate, although belonging to the clafs of Pyrexiæ.

Dr. Darwin observes, it is a common opinion that this disease is as frequently owing to gluttony in eating, as to intemperance in drinking fermented or spirituous liquors; but that he has never seen any person afflicted with the gout who has not drank freely of fermented liquors, as beer or wine; though, as the disposition to all the diseases which have originated from intoxication is in some degree hereditary, a less quantity of spirituous potation will induce the gout in those who inherit the disposition from their parents.

It may likewise be brought on by great sensuality and excess in venery, intense and close application to study, long want of rest, grief, or uneasiness of mind, exposure to cold, too free a use of acidulated liquors, a sudden change from a full to a spare diet, the quick suppression of any accustomed discharge, or by excessive evacuations; and that it sometimes proceeds from an hereditary disposition is beyond all doubt, as females who have been remarked for their great abstemiousness, and youths of a tender age, have been attacked with it.

A peculiar saline acrimony existing in the blood, in such a proportion as to irritate and excite to morbid action the minute terminations of the arteries, in certain parts of the body, has been assigned by some physicians as the proximate cause of gout. Dr. Cullen supposed it to be a loss of tone in the extremities of the system, while it is in a vigorous and plethoric state, and the energy of the brain still retains its vigour.—Dr. Darwin supposes that it arises from the inirritability or defective irritation of some part of the system, the consequence of which is torpor and inflammation; but no hypotheses hitherto advanced, are of a satisfactory nature.

A paroxysm of regular gout sometimes comes on suddenly, without any warning; at other times it is preceded by an unusual coldness of the feet and legs, a suppression of perspiration in them, and numbness, or by a sense of pricking along the whole of the lower extremities; and with these symptoms the appetite is diminished, the stomach is troubled with flatulency and indigestion, a degree of torpor and languor is felt over the whole body, great lassitude and fatigue are experienced after the least exercise, the body is costive, and the urine pallid.

On the night of the attack the patient perhaps goes to bed in tolerable health, and after a few hours is awaked by the severity of the pain, which has affected either the joint of the great toe, the heel, calf of the leg, or perhaps the whole of the foot; and this becoming at length still more violent, is succeeded by rigors, and other febrile symptoms, together with a severe throbbing and inflammation in the part. Sometimes both feet become swelled and inflamed, so that neither of them can be put to the ground, nor can the patient endure the least motion without suffering excruciating pain.

Towards morning he falls asleep, and a gentle sweat breaks out, and terminates the paroxysm, a number of which constitutes what is called a fit of the gout, the duration of which will be longer, or shorter, according to the disposition of the body to the disease, the season of the year, and the age and strength of the patient.

When the paroxysm has thus taken place, although there is an alleviation of pain at the expiration of some hours, still the patient is not entirely relieved from it, and for some evenings successively he has a return both of pain and fever, which continue with more or less violence until morning.

In time the paroxysms, however, prove more mild every day, till at length the disease goes off either by perspiration, urine, or some other evacuation; the parts which have been affected becoming itchy, the cuticle falling off in scales from them, and some slight degree of lameness remaining.

At first, an attack of gout occurs, perhaps, only once in two or three years; it then probably comes on every year, and at length it becomes more frequent, and is more severe and of longer duration each succeeding fit.

In the progress of the disease various parts of the body are affected, and translations take place from one joint or limb to another, and after frequent attacks the joints lose their strength and flexibility, and become so stiff as to be deprived of all motion. In some instances, little swellings of a very hard nature arise in the joints of the fingers, to which a late writer* has applied the title of nodosities. Concretions of a chalky nature are likewise formed upon the outside of the joints, and nephritic affections of the kidneys arise from a deposit of the same kind of matter in them, which although fluid at first becomes dry and firm at last, and when put into acids is perfectly soluble.

It sometimes happens, that although a gouty diathesis prevails in the system, yet from certain causes no inflammatory affection of the joints is produced; in which case, the stomach becomes particularly affected, and the patient is troubled with flatulency, indigestion, loss of appetite, eructations, nausea, vomiting, and severe pains; and these affections are often accompanied with much dejection of spirits, and other hypochondriacal symptoms. In some cases the head is affected with pains and giddiness, and now and then with a tendency to apoplexy; and in other cases the viscera of the thorax suffer from the disease, and palpitations, faintings, cramps, and asthma arise. This is what is called atonic gout.

It likewise happens sometimes, that after the inflammation has occupied a joint, instead of its continuing the usual time and so going off gradually, it ceases suddenly, and is translated to some internal part. The term of retrocedent gout is applied to occurrences of this nature. When it falls on the stomach, it occasions nausea, vomiting, anxiety, or great pain, with a sensation of coldness in the epigastric region; when on the heart, it brings on a syncope; when on the lungs, it produces an affection resembling asthma; and when it occupies the head, it is apt to give rise to apoplexy or palsy.

A third species of irregular gout is the misplaced, which implies where the gouty diathesis, instead of producing the inflammatory affection of the joints, occasions an inflammatory affection of some internal

* See Dr. Haygarth's Clinical History of Diseases.

part, and which appears with the same symptoms that attend inflammations of those parts from other causes.

All occurrences of this nature, as well as of the two former, are to be regarded as attacks of irregular gout, and are to be guarded against as much as possible.

Gout is seldom attended with danger, unless translations take place to some vital part, such as the head, heart, lungs, and stomach; in which instances it often proves fatal. Many constitutions suffer severely, however, from the effects of atonic gout. In youth, the disease admits more readily of alleviation than in an advanced period of life, and its attacks may be rendered milder when acquired, than when it proceeds from an hereditary disposition; moreover the fit is generally shorter in proportion to the violence of the febrile symptoms and the length of intermission.

When the constitution has suffered great ravages from frequent and severe attacks of the gout, various morbid affections of the viscera are to be observed on dissection: calculi of different sizes and colour are to be found in the kidneys; and on examining the joints which have been rendered stiff and immoveable, it appears as if their motion had been destroyed by the formation of chalky concretions of a similar nature with those lodged in the kidneys. These calculous concretions, or chalk stones, as they are called, are supposed to be the consequence of local diseased action, and not of systematic origin; or, in other words, that they are only the effects, and not causes of gouty action.

In a paper read before the Royal Society June 22d, 1797, Dr. Wollaston demonstrated that the concretions which form on the joints of gouty persons are composed of the lithic acid and soda, forming a compound salt, the lithiate or urate of soda. Dr. G. Pearson likewise, in a paper read before the same Society in December 1797, in which he relates the result of the analysis of upwards of three hundred urinary calculi, particularly mentions the existence of this acid in arthritic concretions. The word lithic, borrowed from the term lithiasis, he recommends to be changed to that of uric. Fourcroy also about the same time discovered the uric acid in these concretions.

Notwithstanding the many remedies which have been highly extolled at different times for the cure of the gout, it is a fact well established, that not one which has yet been offered possesses any such power; and all that can be done with safety to the patient, is to conduct him through the paroxysm when it has once commenced, and afterwards by a strict and proper attention to diet, and the making use of gentle daily exercise, to render recurrences of the disease less frequent and more mild than they otherwise might be.

In a regular fit of the gout the aid of medicine is seldom necessary; and all that may in general be requisite, is to keep the inflamed parts moderately warm by wrapping them up in flannel, wool, or fleecy hosiery, and to confine the patient, if young and plethoric, to a spare regimen, carefully abstaining from every thing that might add to the irritation. In elderly people, where the tone of the stomach is weak, or where the patient has been in the constant habit of using strong liquors, and of

living principally on animal food, a more generous diet, with a moderate use of wine, may be allowed; and as Madeira and Sherry wines are the least apt to become acid on the stomach, they ought therefore to be used in preference to any other kind.

During the paroxysm the patient should be kept as quiet and still as possible, and his mind should not be ruffled; but, on the contrary, be soothed and calmed by giving way to his humours; gouty persons being generally captious from the severity of the pain which they suffer.

By adopting an antiphlogistic mode of treatment, we might perhaps, in many instances, be able to remove a fit of the gout; but in so doing, we might occasion a translation to some vital part; for which reason, bleeding from the system and purging ought never to be used; neither should external applications be resorted to; for although liniments, fomentations, and emollient poultices have sometimes been employed with impunity, still at times they have proved pernicious by occasioning a retrocession of gout.

The fostering of arthritic inflammation by the topical use of increased temperature, or covering the parts with flannel, &c. together with the internal employment of stimulant medicines, with a view to obviate its retrocession, and insure its final extinction on the part affected, is supposed by Dr. Kinglake* to be a very erroneous practice, and as repugnant to the indication of relief furnished by every constitutional feature of the disease.

He tells us, that observation and reflection have forced on his conviction the *fact*, that, however loose the analogy might be between the respective proximate causes of ordinary phlegmonous and arthritic inflammations, the resemblance is sufficiently close in the degree of concomitant temperature. In both, the vascular actions of the system and of the part affected, generate a morbid excess of heat, alike referable to distempered conditions of motive power. Impressed with the persuasion, that with regard both to inordinate temperature, and to its general as well as topical manifestations, a radical similitude subsists between these nominally different inflammations, it has appeared to him strictly warrantable to institute a perfectly similar plan of cure, viz. that of reducing heat by keeping cloths wetted with cold water constantly to the parts affected. In support of the efficacy of this plan he recites several cases which were successfully treated by topically abstracting the stimulus of heat from the parts by water, and such other cold media.

We are further told by him, that he thinks himself justifiable in drawing the following inferences, viz. that a high temperature, whether the cause or effect of the morbid conditions of vital power, which proximately constitute gout, is safely and speedily controllable by the simple application of cold water; that the prevailing opinion relative to the critical nature of that disease on the extremities is liable to much distrust; that the local deposit is not, as commonly supposed, a particular preponderance and detention of the constitutional disorder, but that it originates in the parts themselves, and is thence distributed by

* See his Treatise on the Gout.

associated influence over the system; and lastly, that the longer the local affection endures, the greater probability there will be of morbid sympathies being generated and established on the vital organs, which may terminate in rapid and painful death.

Such is Dr. Kinglake's theory, and being somewhat vague, is not, I think, likely to make many proselytes. Popular prejudice is, moreover, very strong against the remedy recommended by him, and therefore the young practitioner, in particular, should be cautious in advising it.

The application of cold water in gouty paroxysms has not, however, originated with this physician, for it is a mode of treatment noticed by Hippocrates and Celsus, and even by some modern writers.* It is therefore only the revival of a practice which has frequently been brought forward, and again abandoned, from its being somewhat hazardous. If the cooling or refrigerant treatment is *ever* adopted, I think it should not be ventured upon until the stomach, and other viscera, have shewn indubitable signs of performing their functions with their proper and accustomed energy, and till the local inflammation has existed for a day or two; and even then, no greater degree of cold should be applied, or be continued for a longer duration, than will be sufficient to subdue the local inflammation. If, notwithstanding this precaution, symptoms of constitutional disturbance should arise, we ought then immediately to remove the refrigerant application, and endeavour to relieve the torpor by suitable stimulants. In no case should the application of cold to the extremities be resorted to without keeping the stomach all the time in a moderate state of activity.

Another physician† tells us, that, with regard to external applications in the gout, none out of the many which he had tried, proved so effectual as steam, and occasionally confining the inflamed part in a rarer atmosphere; for which purpose he recommends a steady use of the air-pump vapour-bath every other or third day. This treatment, we are informed, has not only the happiest effects on the paroxysms while present, but renders subsequent ones more mild, protracting likewise the intervals between them.

Gout not being, however, a mere local complaint, as Dr. Kinglake and some others seem to imagine, but really a constitutional one, local applications, when resorted to, should, I think, always be joined with internal remedies. Of the two external applications just mentioned, the latter seems to be the safer, although it may not probably remove or carry off inflammation in the limb so quickly as the former.

Blistering, stinging with nettles, burning with moxa, as practised in the East Indies, rubbing the part with camphorated spirits, pediluvium of simple water, a tepid bath of water and muriatic acid, in the proportion of one ounce to a gallon of water, and covering the part with oil-skin, are remedies which have been proposed for relieving and carry-

* See Mr. Rigby's Treatise on Animal Heat.—Medical Observations, vol. vi.

† See Dr. Blegborough's Communications on Gout, vol. xii. p. 62, of the Medical and Physical Journal.

ing off a paroxysm of gout; but they are all attended with risk, and ought therefore to be avoided. In those cases where it has been repelled, the application of a blister to the part originally affected, is often attended, however, with the best effect. As soon as the inflammation has been brought back to its original place, the blister ought immediately to be removed, and a bit of fine lint, dipped in fresh oil, be applied as a dressing, wrapping the limb in flannel or fleecy hosiery immediately afterwards.

When medicines are necessary in a regular fit of the gout, in consequence of the inflammation and febrile symptoms running high, those possessed of the power of determining gently to the surface of the body, will be most proper, and may therefore be given as below.* To promote their effect, the patient ought to drink plentifully of mild diluents.

With the view of exciting a gentle diaphoresis, and thereby shortening the paroxysm, a solution of guaiacum is sometimes administered; but where there is much febrile heat, this medicine would be improper.

If costiveness prevails in so high a degree as to render it necessary to evacuate the intestines, it will be best to give a proper quantity of the tincture of rhubarb, or some such warm stomachic laxative.

From the severity of the pain in gout, opiates are sometimes resorted to; but when given in the beginning of gouty paroxysms, or where there is much inflammation, they often make them return with greater violence; but in those cases where the person is far advanced in life, has had frequent attacks, and where there is little or no inflammation, but merely restlessness, they may be given with safety and advantage. About two scruples or a drachm of the confectio opiata, taken at bed-time, may be preferable to the tinctura opii.

Hemlock and other narcotics have of late been much employed in gout, and some practitioners have bestowed high encomiums on the former; but from the few trials I have made, I cannot report favourably of it.

On the termination of a fit of the gout, a fresh paroxysm is to be delayed or rendered less violent by observing great temperance during the intervals; by avoiding the exciting causes of the disease; by moderate exercise; by a use of mild cathartics; by avoiding cold, and by strengthening the body.

When any swelling and stiffness remain in the joints after the paroxysms have ceased, the stimulus of galvanism, conjointly with the frequent use of a flesh-brush, may be attended with some benefit.

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* ℞. Pulv. Antimonial. gr. ij.
Ammoniæ gr. viij.
Conserv. Rosæ q. s. M.
ft. Bolus 3tia vel 4ta hora sumendus.
Vel

℞. Succi Limon. ℥ss.
Ammoniæ q. s. ad ejus saturationem
Aq. Puræ ℥vj.
Vini Antimonii gutt. xij.
Syrup. Cort. Aurant. ℥j. M.
ft. Haustus 4ta vel 6ta hora sumendus.

In consequence of frequent attacks of the gout, assisted probably, by some peculiarity of the patient's constitution or habit of body, little swellings or nodosities arise on or near the joints of the fingers, for the removal of which we are told by a late writer † that the following indications should be observed, viz. first, to diminish the increased action of the vessels in the part by which the secretion of the morbid matter is performed; secondly, to promote a free perspiration of the part affected; and thirdly, to correct the prevailing disposition to acidity in the primæ viæ, and in the system in general. To accomplish the first of these indications, leeches are to be applied to the tumefied part, their number being determined by the extent of the tumour and degree of the disease. To obtain the object of the second indication, the part is to be surrounded by a plaster of equal parts of simple diachylon and white soap, the adhesion of which to the skin becomes in a few days so slight as to admit the free exit of the perspirable matter through the skin, and which being hindered from escaping farther, condenses on the surface of the plaster. To fulfil the third indication, a due attention is to be paid to the mode of living, by avoiding acid and acescent matters, and particularly such fermented liquors as have begun to manifest marks of acescency. To neutralize that acidity which, being present in the stomach, would secure its increase by acting as a ferment, it may be advisable to give the soda in doses from five grains to ten or fifteen in the day.

From the combined influence of these measures it appears, by Mr. Parkinson's account, that the utmost success that hope could look for has been obtained. The gradual diminution, and finally, the complete removal of nodosities which had existed for several months, have been thus procured; while those which had existed for some years have been so much reduced as to allow of considerable motion in joints which had become nearly immoveable.

Dr. Bardsley, physician to the Manchester Infirmary, mentions in his Medical Reports, that he looks on nodosities of the joints to be more nearly allied to chronic rheumatism than to gout. He has therein given the history of three cases of this nature, in the last of which, after a fair but unsuccessful trial of arsenic, cod-liver oil (a remedy much used in Lancashire,) bark, guaiacum, and warm bathing, he had recourse to mercurial frictions; and by establishing and keeping up for some time a gentle salivation, with the assistance of tepid bathing, and topical bleedings by leeches, he effected a cure. From this instance he appears to think that mercury is capable of destroying the disease, when in its incipient state.

In irregular, or atonic gout, where no inflammation of the joints is produced, although the gouty diathesis prevails in the system, but the stomach is affected with indigestion, flatulency, acid eructations, and pain, the patient ought not only to avoid all debilitating causes, but

† See Observations on the Nature and cure of Gout, &c. by Mr. James Parkinson.

should employ proper means for strengthening the system in general, and the stomach in particular.

To support the tone of the system, a proper quantity of animal food ought to be taken, and that which is most nutritive and plain should be preferred. Gout, when in the system, and not regularly formed, requires an excess of animal food to drive it to the extremities, though in some measure it may aggravate the disease should a paroxysm ensue. With the same view, a moderate allowance of wine will be proper; but all kinds of acescent wines, such as hock, claret, &c. ought to be avoided. Madeira and Sherry are those which will be most suitable. If the acidity in the stomach is perceived to be increased by a use even of these wines, weak brandy and water, without any addition of either sugar or lemon, may then be substituted. Cold bathing is a powerful tonic; but in gouty habits it appears to be rather a hazardous remedy, and ought not therefore to be used.

To strengthen the stomach, aromatics, the Peruvian bark,* and chalybeates, may be given. (See Dyspepsia.) The cinchona is not apt, when long continued, to produce atony in the stomach, like other bitter remedies, and therefore a preference should be given to it over all others by persons of a gouty habit.

In those cases where gout produces anomalous affections of the head, stomach, and bowels, the greatest benefit may be derived from the Bath water; and it is here a principal advantage to be able to bring by warmth that active local inflammation in any limb which relieves all the other troublesome and dangerous symptoms. Hence it is, that this water is commonly said to produce the gout, by which is meant only, that where persons have a gouty affection, shifting from place to place, and thereby much disordering the system, the internal and external use of the Bath water will soon bring on a general increase of action, indicated by a flushing in the face, fulness in the circulating vessels, and relief of the dyspeptic symptoms, and the disorder will at length terminate in a fit of the gout, which is the crisis to be wished for.

In various cases of gout, especially where the high inflammation of particular limbs has gone off, and where it has left either a number of dyspeptic symptoms, or a rigidity or impaired action in the seat of the disease, an internal use of Buxton water has been recommended. As an external application in gout, it has also been found serviceable in restoring the functions to parts so diseased.

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* ℞ Infus. Rad. Columb. ℥iv.
Tinct. Cort. Peruv.
———Cardam. C. āā ℥fs. M.
ft. Mistura cujus sumat æger Cochl. ij. magna bis terve in die.

Vel

℞. Rubig. Ferri ʒij.
Pulv. Cort. Peruv. ℥j.
———Aromat. ʒjfs.
Syrup. Cort. Aurant. q. s. M.
ft. Electuarium de quo capiat quantitatem juglandis bis in die.

When any costiveness arises, it is to be removed by some laxative* that will keep the body open without occasioning much purging; and if the stomach is troubled with acidities, a gentle emetic may be taken now and then, with a daily use of some absorbent.†

In severe attacks of atonic gout, some practitioners have advised the application of blisters to the lower extremities; but they ought to be avoided in those cases which are attended with much pain in the parts.

When the stomach or intestines become affected in consequence of retrocedent gout, immediate relief ought to be attempted by making the patient drink freely of wine, or even brandy, joined with aromatics. In affections of this nature, strong spirits impregnated with assafœtida or garlic may also be given with much advantage. Opiates‡ joined with aromatics, or with camphor, musk, or volatile alkali, may be of service. From one to four tea-spoonfuls of equal parts of camphorated tincture of opium, and ammoniated tincture of guaiacum, in any suitable vehicle, will be a proper medicine. Æther will likewise be a useful remedy. At the same time that we administer these medicines internally, warmth should be applied externally to the region of the stomach by hot cloths, fomentations, or a bladder filled with warm water, and hot bricks wrapped in flannel must be put to the feet. Frictions with brandy, or the linimentum ammoniæ fortius, over the stomach, will also be proper. If nausea and vomiting come on, the stomach is to be relieved by taking a few draughts of wine, somewhat diluted with warm water, having recourse afterwards to opiates combined with camphor.

If there is a translation of the disease from the extremities to the head, so as to threaten apoplexy or palsy, a large blister ought to be applied to the back, as likewise small ones to the inside of the legs, with cataplasms to the soles of the feet, and the patient must take from twenty-five to forty drops of the spiritus ammoniæ compositus, every three or four hours, or a combination of volatile alkali, æther, and aro-

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* ℞. Elect. e Cassia ℥ij.
Pulv. Rhabarb. ʒij.
——Jalapii ʒj.
Ol. Carui gutt. v.
Syrup. Zingib. q. s. M.
ft. Electuarium cujus capiat magnitudi nem juglandis pro re nata.
Vel
℞. Tinct. Sennæ Comp. ℥j.
pro dos.
Vel
℞. Aloes Socotorin.
Sapon. Hispan. āā ʒij.
Ol. Cinnam. gutt. v.
Syrup. Spinæ Cervin. q. s. M.
fiat Massa in Pilulas æquales 48 dividenda, quarum sumat ij. vel iij. hora somni.

† ℞. Magnes. Alb. ℥ss.
Pulv. Rhabarb. gr. vij.
——Aromat. gr. v. M.
ft. Pulv. mane et vesp. sumendus.

‡ ℞. Opii gr. j.
Camphor. gr. vj.
Acohol. q. s.
Confect. Aromat. gr. xv. M.
ft. Bolus pro re nata sumendus.
Vel
℞. Misturæ Camphorat. ℥jss.
Ammoniæ gr. x.
Tinct. Opii gutt. xij.
Æther. Vitriol. gutt. xv.
ft. Haustus tertia quaque hora sumendus.

matics. About six drachms or an ounce of the tinctura aloes may also be taken as a gentle purgative.

When the gout attacks the lungs, and produces asthma, blisters should be applied to the breast or back, and stimulating cataplasms to the soles of the feet, and opiates and antispasmodics should be administered internally. From twenty to fifty drops of vitriolic æther may be taken every two or three hours in a glass of wine, and an opiate* may be repeated as the necessity of the occasion requires.

In this particular retrocession of gout, where the attack is so severe as to threaten suffocation, might not venesection be resorted to with advantage?

Where the disease attacks the kidneys, and imitates a fit of the gravel, the patient ought to keep warm fomentations, or bladders filled with warm water, constantly applied over the parts affected; he should drink freely of tepid diluting liquors, and an emollient clyster, with an addition of a small quantity of tinctura opii, ought frequently to be injected. In order to alleviate the pain, thirty or forty drops of the same tincture may likewise be taken by the mouth in any kind of vehicle.

The gout imitates many diseases, as has just been observed; and by being mistaken for them and treated improperly, is often diverted from its regular course, to the great danger of the person's life; for which reason, those who have had the gout ought to pay particular attention to any complaint that may happen to take place about the time they may have reason to expect another attack of it. Those likewise who never had the gout, but who, from constitution or manner of living, have reason to expect it, ought also to be very circumspect with regard to its first approach, as by any wrong conduct or improper treatment it might be diverted from its right course, and be thrown upon some vital part.

It has already been observed, that the gout does not admit of a cure by medicines, notwithstanding that many have been extolled as possessing such a power. Some time ago, the Portland powder† was held in the greatest celebrity, but from having been found in many instances to have proved pernicious, is now wholly laid aside.

Dr. Cullen mentions in his Practice of Physic, that in every instance which he knew of the exhibition of this remedy being persevered in for the time prescribed, the persons who had taken it, were indeed, afterwards free from any inflammation of the joints, but they soon were af-

† This medicine is made of equal parts of the roots of round birthwort and gentian; of the leaves of germander and ground-pine, and of the tops of the lesser centaury. These are to be well dried, pounded and sifted, so as to make a fine powder. The dose is a drachm every morning for the first three months, three quarters of a drachm for the ensuing three months, and half a drachm for the next six months. In the second year, only half a drachm is to be taken every other day.

* ℞. Confect. Aromat. ʒj.
Aq. Cinnam. ʒiſs.
Tinct. Opii gutt. xxx. M.
ft. Hauſtus.

fected with many symptoms of atonic gout, and all quickly after finishing their course of the medicine were attacked by apoplexy, asthma, or dropsy, which proved fatal. Dr. Murray, professor at Gottingen, reports in his Apparatus Medicaminum, that he found the Portland powder produce, in many instances, apoplexy, palsy, and acute disorders, together with difficulty of breathing, a dry cough, and tubercles of the lungs, which proved suddenly mortal. Dr. Darwin tells us in his Zoonomia, that two cases of a fatal termination from a long-continued use of bitter medicines fell under his observation. The daily use of hop in our malt liquors must, he thinks, add to the noxious quality of the spirit in them, and contribute to the production of apoplexy or inflammation of the liver. It has indeed been observed by many other physicians of eminence, that a long-continued and excessive use of the Portland powder, and other bitter remedies, seldom fails to weaken the digestive power of the stomach, so as to produce a loss of appetite and prevent the proper concoction of the food, which has accelerated the death, instead of restoring the health of those who had used them.

Alkalis in various forms, such as the fixed alkali, both mild and caustic, lime-water, soap, and absorbents, have likewise been employed for the prevention of gout; and of late the alkaline aërated water has been more generally used than any other. Since it became common to exhibit these medicines in nephritic and calculous cases, it has often happened that they were given to those who were at the same time subject to the gout; and it has been observed, that under a use of these medicines, gouty persons have been longer free from the fits of the disease than before. However this may be, still we may rest well assured, that more is to be done by proper regimen and regular exercise towards rendering the recurrences of gout less frequent, and its attacks less severe, than by any other means whatever, being at the same time attended with much greater safety.

In those who have an hereditary disposition to gout, it is certain that it may often be prevented from taking place, by paying an early and strict attention to these circumstances; and even after it has shewn itself by a regular attack, its returns may possibly be prevented for the remainder of life; but it is only those who have sufficient resolution to observe a steady perseverance in such a course, that can have any reason to expect a cure.

Exercise in persons disposed to the gout, not only strengthens the system, but tends likewise to prevent a plethora. To prove advantageous, it must, however, be constant, regular, and continued through life, and should only be moderate. In the beginning of the disease, when the disposition or tendency to it is not strong, exercise will often prevent an attack which might otherwise have taken place, and in the intervals it will always be proper as long as the patient retains the use of his limbs. In a more advanced state of the disease, where there is an evident disposition to a paroxysm, much walking ought to be avoided, as it might tend to hasten its approach, by increasing the inflammatory disposition in the lower extremities.

While the vigour of the system still remains unimpaired, either by

intemperance, or frequent attacks of the gout, an abstinence from animal food may be entered upon with safety, in order to prevent a recurrence of the disease; but if this abstinence shall not have been adopted until the constitution has been hurt by intemperance, frequent fits, or the decline of life, it certainly will prove injurious, and might tend to bring on an irregular attack. A sudden change from a full to a spare and low diet, will in all cases whatever be highly improper; and whenever an alteration is made in the mode of living, it ought to be done in a gradual manner.

Where an abstinence from animal food is to be observed, a diet consisting of milk, and the farinaceous seeds, will be the most proper, and all kinds of spirituous and fermented liquors are to be avoided; but where custom or a declining state of the system has rendered them absolutely necessary along with a use of animal food, they are then to be used with moderation.

Besides regimen and exercise, it will be necessary for the patient to observe universal temperance; he is to shun night studies, and any excess in sensual gratifications; he should go to bed betimes, and rise early; and he should avoid all exposure to cold, but more particularly getting wet in the feet. In short, the common rules for preserving health should be attended to in a particular manner by gouty subjects.

Of the RHEUMATISM, or RHEUMATISMUS.

THIS disease is distinguished into the chronic and the acute; being known by the former appellation, when there is no great degree either of inflammation or fever present, but merely pains; and by the latter, when both fever and inflammation exist in a high degree.

It may arise at all times of the year, when there are frequent vicissitudes of the weather from heat to cold; but the spring and autumn are the seasons in which it is most prevalent; and it attacks persons of all ages; but very young people are more exempt from it than adults. Those whose employments subject them to alternations of heat and cold, are particularly liable to rheumatism.

Although acute rheumatism somewhat resembles the gout, still in some respects it differs from it. It does not usually come on so suddenly as a fit of the gout, but for the most part gives the patient warning by a slow and gradual increase of pain. Neither is it fixed to one spot like the gout, but is distinguished by its frequent wanderings from place to place, accompanied by a sense of numbness. It seldom attacks the small joints, but is confined chiefly to the larger, as the hip, knees, and shoulders. Acute rheumatism is generally attended with a continued fever; whereas the gout has periodical remissions. Like most of the pyrexiæ, it is preceded by rigors, and a sense of cold. A febrile, quick, and hard pulse supervenes: the veins near the part affected swell, and a throbbing pain is felt in the arteries. By degrees the pain increases, and the patient suffers cruel torture, which is increased on the least motion. The sense of pain resembles that of a

slow dilaceration of the parts, and commonly goes off by a swelling of the joint or joints. The rheumatism moreover is not preceded by dyspeptic symptoms, as is usually the case with the gout; neither do chalky concretions form about the small joints and fingers, as in the latter.

Obstructed perspiration, occasioned either by wearing wet clothes, lying in damp linen or damp rooms, or by being exposed to cool air when the body has been much heated by exercise, is the cause which usually produces rheumatism. Those who are much afflicted with this complaint are very apt to be sensible of the approach of wet weather, by finding wandering pains about them at that period: in fact, they are living barometers.

The proximate cause is supposed to be an inflammation of the membranes and tendinous aponeuroses of the muscles.

Acute rheumatism usually comes on with lassitude and rigors, succeeded by heat, thirst, anxiety, restlessness, and a hard, full, and quick pulse; soon after which, excruciating pains are felt in different parts of the body, but more particularly in the joints of the shoulders, wists, knees, and ancles, or perhaps in the hip; and these keep shifting from one joint to another, leaving a redness and swelling in every part they have occupied, as likewise a great tenderness to the touch. Towards evening there is usually an exacerbation or increase of fever, and during the night the pains become more severe, and shift from one joint to another.

Early in the course of the disease some degree of sweating usually occurs; but it seldom removes the pains, or proves critical. In the beginning the urine is without any sediment; but as the disease advances in its progress, and the fever admits of considerable remissions, a lateritious sediment is deposited; but neither does this prove critical.

Chronic rheumatism is attended with pains in the head, shoulders, knees, and other large joints, which at times are confined to one particular part, and at others shift from one joint to another without occasioning any inflammation or fever, and in this manner the complaint continues often for a considerable time, and at length goes off.

Little danger is attendant on chronic rheumatism; but a person having once been attacked with it, is ever afterwards more or less liable to returns of it, and an incurable anchylosis is sometimes formed in consequence of very frequent relapses. Neither is the acute rheumatism often accompanied with much danger; but in a few instances the patient has been destroyed by general inflammation, and now and then by a metastasis to some vital part, such as the head and lungs. Acute rheumatism, although accompanied with a considerable degree of inflammation in particular parts, has seldom been known to terminate in suppuration; but a serous or gelatinous effusion sometimes takes place.

A general, but not unnaturally profuse, perspiration; the deposit of a lateritious or furfuraceous sediment in the urine, eruptions on the skin, or moderate hemorrhage of blood from the nose or other parts, may be regarded as favourable symptoms; whereas the inflammation becoming

erysipelatous and assuming a dark red or rose colour, and this followed by vesications, metastases of the inflammation to the head, chest, or abdominal viscera, producing the symptoms of the idiopathic diseases of these organs, are to be looked upon as unfavourable.

Rheumatism seldom proving fatal, very few opportunities have offered for dissections of the disease. In the few which have occurred, the same appearances have been observed, as those mentioned under the head of Inflammatory Fever. In the joints, thickening of the membranes, adhesions, and gelatinous effusions, are the only phenomena to be met with.

The principal thing to be attended to in the treatment of acute rheumatism, is to obviate the general inflammation which prevails, and this is to be effected by strictly pursuing an antiphlogistic regimen, and by blood-letting, proportioning the quantity we take away to the violence of the symptoms, and the age, strength, and habit of the patient. If the pains continue very severe, and the pulse full, hard, and quick after bleeding, and the blood appears very sizy on becoming cool, we may with great propriety repeat the operation either on the same day or the next; but this mode of proceeding should be adopted only at an early period of the disease. The reduction of vascular action is, however, more particularly to regulate the repetition, than the buffy appearance of the blood, which in many cases continues to increase, notwithstanding the abstraction of blood, and is not diminished by bleeding. This circumstance should be attended to.

In weak irritable habits, where no great degree of general inflammation prevails, and little or no fever attends, and where the inflammation is chiefly local, topical bleeding, by means of several leeches applied to the part affected, may be substituted instead of using the lancet, and will often be found to afford essential relief. They may likewise be used with benefit where much inflammation prevails in the system, as well as in particular parts, provided that some general bleeding has been premised or adopted. When leeches cannot be procured, scarifying and cupping may be employed in their stead.

It has been usual, in acute rheumatism, to rely principally on large and repeated bleedings at an early period, joined with an antiphlogistic regimen; and no doubt this evacuant plan of treatment has in some cases been carried to excess, and produced an alarming degree of debility. Having reflected much on this circumstance, and well considered the wonderful power which the digitalis possesses of diminishing the action of the heart and arteries, I have lately employed it in some severe cases of acute rheumatism after one or two bleedings from the system, and with much apparent advantage; for I found that its use rendered any further repetition of venesection unnecessary. In the instances to which I allude, from ten to twenty drops of its tincture were given every four or six hours.

In case of costiveness prevailing, one or two evacuations should be procured daily by making use of some gentle cooling purgative, such as the neutral salts, or by giving laxative clysters, which may be the preferable way when the disease is general and violent, as the motion oc-

casioned by frequently getting up to stool, would prove irksome and painful to the patient.

Where the pain is chiefly confined to one part, and is unaccompanied by much inflammation, the application of a blister will be likely to prove serviceable, or we may rub it with some kind of rubefacient liniment;* but where the pains are wandering, and there are frequent translations from one joint to another, neither of these remedies will be of much use. In acute rheumatism, warm fomentations ought never to be employed, as they are found to aggravate the pains, instead of alleviating them.

When any of the joints of the extremities swell very much, and are highly painful, we may, besides drawing blood from the part by means of leeches, make use of attenuating cataplasms, such as the cataplasma farinæ compositum† of the Pharmacopœia Chirurgica, the ingredients of which being wrought into a paste with hot water, are to be wrapped round the part affected, and to be renewed morning and evening.

The reduction of heat by keeping linen cloths wetted in cold water, or in a solution of muriated ammonia with nitre, constantly to the inflamed parts, may, I think, be adopted with safety and much advantage in acute rheumatism, although in gout the remedy ought certainly to be looked on as hazardous. During the summer of 1807, I visited Russia for a few months, and understood that the physicians there are in the habit of recommending the application of snow or pounded ice in cases of this nature.

After the necessary evacuations have been made, diaphoretics may then be used, and either those of the antimonial kind, as advised under the head of Simple Fever, may be prescribed in small and frequently repeated doses, or from ten to twelve grains of the pulvis ipecacuanhæ compositus‡ may be given every three or four hours. Volatiles are employed by some practitioners in the cure of rheumatism, for the purpose of exciting a diaphoresis. With the same view camphor has been likewise administered. They may be given separately, or be combined to-

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* ℞. Spirit. Camphorat. ℥ij.
Aquæ Ammon. Pur. ℥ifs.
Essent. Ol. Berg. gutt. x. M.
ft. Linimentum.

Vel

℞. Ol. Olivæ ℥iij.
—Terebinth. ℥j.
Acid. Sulph. gutt. xij. M.

Vel

℞. Ol. Olivæ ℥ij.
Camphoræ ℥ij. Solv. et adde
Tinct. Cantharid. ℥j.
Aq. Ammon. Pur. ℥fs. M.

Vel

℞. Liniment. Sapon. ℥ij.
Aq. Ammoniæ
Tinct. Cantharid.
——Opii ää ℥ij. M.

† ℞. Farinæ Secalis ℔j.
Fermenti Veteris Acris ℥iv.
Natri Muriati ℥ij. M.
ft. Cataplasma.

‡ ℞. Pulv. Ipecac. C. gr. x.
Conserv. Rosæ gr. xij.
Syrup. q. s. M.
ft. Bolus 3tia vel 4ta hora sumendus, superbib. Cochl. iij. Misturæ sequentis.

℞. Succ. Limon. ℥jfs.
Ammoniæ ℥j.
Aq. Fontan. ℥ivfs.
Nitri Purific. ℥fs.
Syrup. Althææ ℥fs. M.
ft. Mistura.

gether agreeable to the formulæ advised below,* should the remedies before recommended not prove sufficiently powerful. To increase the effect of all these medicines, the patient should drink freely of diluents, such as herb-tea, barley-water, and wine-whey.

Sweating is an evacuation which is indeed generally employed both in the acute and chronical rheumatism, and sometimes, as it has seemed, with benefit; but it is well known at the same time, that patients labouring under these diseases are of themselves subject to excessive sweats, without any mitigation of the symptoms.

Opiates combined with camphor are given by many practitioners in acute rheumatism; but such a compound is not likely to prove efficacious, and the best way of administering opium in this disease is by using the pulvis ipecacuanhæ compositus as has just been mentioned, or by giving it combined with antimony.†

A new mode of treating every case of acute rheumatism by a liberal and early use of the bark has been adopted, as well as recommended, by a late celebrated reader of lectures on the practice of physic.‡ He informs us, in his Third Dissertation on Fever, that for the last fifteen years he had entirely left off bleeding in this disease, and that he had not lost above two or three patients, although he treated several hundreds who laboured under it in this way; and he adds, that when he practised bleeding largely in acute rheumatism, metastases were very apt to take place, and to destroy the patient, which accident had rarely happened since he discontinued its use.

With due deference to so high an opinion, I am, however, induced to think that where the inflammation of the system is great, early and copious venesection is not only necessary in very violent attacks of acute rheumatism, but that those who fall victims to it, die frequently from its not having been adopted.

Another advocate for a very early use of the bark in this disease is Dr. Haygarth, who tells us§ that for several years his usual method of treating acute rheumatism has been to give either the antimonial pow-

‡ Dr. George Fordyce.
§ See his Clinical History of Diseases.

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* ℞. Ammoniæ gr. x.—℈j.
Pulv. Antimon. gr. ij.
Conserv. Rosæ q. s. M.
ft. Bolus 4ta quaq. hor. sumendus.
Vel
℞. Camphor. gr. iij.
Ammoniæ ℈ss.
Antimon. Tartarisat. gr. 1-6.
Conserv. Prun. Sylvest. q. s. M.
ft. Bolus.
Vel
℞. Seri Lactis Vinos. ℥x.
Liq. Vol. Corn. Cerv. gutt. xxx. M.
Bibat æger hora decubitus.
Vel
℞. Mistur. Camphorat. ℥j.
Aq. Ammon. Acetat. ℥iij.
Vin. Antimon. gutt. xx. M.
ft. Haustus 4ta vel 6ta quaque hora repetendus.

† ℞. Pulv. Antimonial. gr. ij.—iij.
Opii gr. ss.
Conserv. Rosæ q. s. M.
ft. Bolus 6ta quaq. hora sumendus.
Vel
℞. Aq. Ammon. Acetat. ℥ss.
——Menth. Sativ. ℥j.
Vin. Antimon. gutt. xl.
Tinct. Opii gutt. xxx.—l.
Syrup. Simpl. ℥ij. M.
ft. Haustus hora somni sumendus.

der or tartarised antimony, generally the former, till the stomach and bowels are sufficiently cleansed; without waiting for any other evacuation or abatement either of the inflammation or the fever, he then orders the bark, at first in small doses, and if they succeed, gradually in larger; but if it disagrees in any respect, or does not produce manifest relief of the symptoms, the bark is suspended, and the antimony again repeated, till it shall have produced sufficient evacuations. After cleansing the stomach and bowels a second time, he administers the bark again, at first sparingly, and then more freely. He never continues it longer nor in larger quantity than what perfectly agrees with the stomach, the fever, and the rheumatic inflammation. Dr. Haygarth cautiously adds, however, that if doubts occur on any of these points, it will be advisable to have recourse to bleeding by the lancet or leeches, or both, and to more evacuations by antimony. In such cases, the bark is not to be again employed till the inflammatory symptoms are abated.

Our author assures us that, with the exception of a very few cases, the bark has uniformly produced the most salutary effects. The pains, swellings, sweats, and other symptoms of inflammatory fever, manifestly and speedily abated, and gradually ceased, till health was perfectly restored. The evidence adduced by him is much in favour of the cinchona as a remedy in acute rheumatism; but his inferences are, beyond all doubt, carried too far, and may induce some practitioners to look on it in too favourable a light, to the neglect of other important remedies.

By most other physicians the use of Peruvian bark during the inflammatory state of acute rheumatism has been much disapproved of, and it is only after the inflammatory diathesis has been obviated, and where at the same time the exacerbations of the disease are evidently periodical, with considerable remissions interposed, that its use has been thought proper.

Since the first edition of this work appeared before the public, I have been much in the habit of administering the cinchona, joined with nitre,* in acute rheumatism, and generally with a very happy effect. I would therefore recommend this combination of medicine in preference to giving the bark separately; but I by no means advise the use of it even in this way, until the inflammatory symptoms have been somewhat counteracted by evacuants of different kinds, as already pointed out. Where there are intermissions of pain, a clean and moist tongue, a perspiring skin, and a lateritious sediment in the urine, the use of this remedy is clearly indicated.

Dr. Hamilton, of Lynn Regis, informs us,† that in those cases of

† See vol. ix. of the Edinburgh Medical Commentaries.

* ℞. Pulv. Cinchonæ ʒfs—ʒj.
Kali Nitrati gr. x. M.
ft. Pulvis 4tis horis repetendus.

℞. Decoct. Cinchon. ℥jfs.
Kali Nitrati gr. x. M.
ft. Hauſtus.

Vel

acute rheumatism where blood-letting and sudorifics have been pushed as far as may be thought prudent, without being productive of the desired effect, and where a sufficient remission cannot be obtained so as to give bark, very great benefit is often to be derived from the use of calomel combined with opium, which combination he has frequently employed in the proportion of from five grains to one of the former, and from one to one-fourth of the latter, according to the age and strength of the patient, and administered every six, eight, or twelve hours, as the degree of inflammation, or the threatening aspect of the disorder, seemed to require. Along with this remedy, he enjoins a plentiful dilution with barley-water, or any other weak tepid beverage.

A different mode of treatment from what has been advised in acute rheumatism must be adopted in the chronic species. Here bleeding from the system will neither be necessary nor proper. In most cases, however, it will be advisable to rub the parts which are the seat of the disease, several times a day with some rubefacient liniment, as prescribed in acute rheumatism, after which they are to be enveloped in flannel. The regular use of a flesh-brush, with electricity or galvanism, may be requisite in cases of long standing, and where there is any rigidity in the parts.

Frictions with acetic æther on the painful parts have been employed in France with much benefit, particularly in cases of sciatica and lumbago. The remedy is reported* to possess the advantage of producing an agreeable heat on the skin, and a very useful perspiration, without augmenting the irritation or erethism in the parts.

Camphor dissolved in vitriolic æther, and applied externally in painful affections of the joints, has likewise afforded singular relief in a great variety of instances.

Where the ligaments and membranes of the joints are the peculiar seat of the disease, or an enlargement of the extremities of the bones has taken place, the first attempt at relief, especially in young and vigorous subjects, should be directed to local bleeding either by leeches, or what is to be preferred, the operation of scarifying and cupping. When the pain and irritation are abated by repeated bleeding, no time should be lost in securing a drain from the part by the aid of issues, making them with caustic in preference to the knife. In hip cases of long standing, as well as in obstinate ones of sciatica, the same practice will be found highly beneficial.

Immersing the whole body in a warm bath, or applying it topically, has in many instances proved very useful, together with proper exercise, either of the part itself or of the whole body, if the patient is capable of taking it.

If the pains are of a recent date, and chiefly attack the muscles and thin membranous coverings, occasionally shifting from one part to another, and the strength is at the same time but little reduced, there can be no doubt that a moderate use of a warm bath, of about 100 degrees, may be serviceable; but where it proves unsuccessful after

* See Recueil Périodique de la Société de Médecine de Paris, No. xliii.

two or three trials, it ought to be discontinued. In soothing pain, relaxing the stiffened joints and rigid fibres, particularly in elderly patients, whose strength has been much reduced by the length and violence of the disorder, a tepid bath of from 84 to 90 will often prove a useful auxiliary to the other means we employ.

Both remedies, however, may, I think, be considered of inferior value in the cure of rheumatism, when compared with the topical, and sometimes general use of hot water in the form of vapour. Whenever the joints are very rigid, and the pain upon motion exquisitely severe, or where the muscles have become contracted and almost paralytic; and indeed, in all protracted cases of the disease of the hip-joint, lumbago, or sciatica, the vapour of hot water, locally and properly applied, will seldom fail, in conjunction with other proper topical applications, to prove a safe and successful remedy. The mode of applying it must be regulated according to circumstances. A large boiler, with a pipe affixed to it, forms a simple apparatus. With this, the parts affected may be steamed for about half an hour at a time, repeating the process two or three times a day.

After exposing the diseased parts for a due length of time to the action of vapour, and diligently rubbing in some rubefacient liniment during the operation, we may immediately after employ electricity, either in slight shocks, or by drawing sparks. Perhaps the latter may be the preferable way. The process being completed, the parts are then to be enveloped in flannel.

Dr. Bardsley, in his Medical Reports, mentions, that he has seen at the Manchester Infirmary several hip cases of long standing yield to the persevering use of topical bleeding by means of cupping and scarifying, with the aid of issues; but in order to remove the rigidity and want of tone which remained in the parts after the subsidence of the more violent symptoms, he was obliged to have recourse to the aid of vapour and electricity. In some very obstinate cases of sciatica, which resisted all other means of relief, he has also witnessed the happiest effects from issues; but he observes, that he often found it necessary to surround the joints with several of these drains, moderating the degree of irritation and discharge according to the obstinacy of the disease and strength of the patient.

The chronic rheumatism in all its forms, succeeding to the acute, and where the inflammation has been chiefly seated in moving parts, is often wonderfully relieved by bathing in the Buxton waters, and the healthy action is soon so far restored as to enable the patient to use the more powerful remedy of sea-bathing, or the common cold bath. On account of the slightness of the shock of immersion, very delicate and irritable habits, and especially parts weakened by disease, can generally bear this degree of cold, and overcome it by a very small re-action; to produce which, appears to be often a most salutary effort of the constitution.—Hence the Buxton bath is become almost a technical term for any bath heated to the highest degree that is compatible with giving some sensation of cold, when the body is first plunged into it.

The power of the Bath water is chiefly confined to that species of

rheumatism which is unattended by inflammation, or in which the patient's pains are not increased by the warmth of his bed.

Cold bathing has been advised by some physicians; while others again have disapproved of it.

Blisters are sometimes employed in this complaint; but they seem to be most serviceable in those cases where the disease partakes of the nature of acute rheumatism, or where the pain is fixed in any particular joint. With respect to the mode of their application, it seems proper to observe, that a repetition of fresh blisters will be far preferable to keeping up a constant sore by stimulating the vesicated parts with the unguentum cantharidis; and in the former way, we shall likewise produce greater effect upon the disease. In some instances it will be found more beneficial to apply the remedy at a little distance from the seat of the disease, than to lay it immediately on the affected part. Indeed, whenever the complaint seizes upon any of the larger and deep-seated muscles at their origin near the joints, applying blisters to the inferior extremities of such muscles, and near to the points of their insertion, will be found highly beneficial. Thus in recent and slight cases of sciatica, the application of a blister to the inferior extremity of the thigh-bone often proves speedily useful.

Compressing the large arteries by means of a tourniquet, as mentioned under the head of Intermittents, is another remedy which has been employed with advantage* in some instances of severe rheumatic pains.

The internal remedies which have been most generally recommended in chronic rheumatism are sudorifics and medicines of a stimulating nature, which abound in essential oils and resins; and therefore volatile alkaline salts, guaiacum, turpentine, and the like, may be administered as in the undermentioned formulæ.† In the most aggravated instances of this species of rheumatism, where great torpor and debility prevail, guaiacum, in as large doses as the stomach will bear, often proves a powerful remedy when aided by topical applications. The ammo-

* See Dr. Duncan's Annals of Medicine for 1801.

† ℞. Terebinth. Venet. ℥j.
Vitell. Ovi q. s.
Spirit. Junip. Comp. ℥j.
Aq. Fontan. ℥iv. M.
ft. Miſtura cujus sumat Cochl. larg. ij. tertia vel quarta quaq. hora.

Vel

℞. Tinc. Guaiac. Vol. ʒij.
Spirit. Cinnam. ℥ſs.
Aq. Fontan. ℥j.
Vin. Antimon. gutt. xx. M.
ft. Hauſtus ter die sumendus.

Vel

℞. Tinct. Guaiac. Vol. ʒij.
pro dos. in quovis vehiculo.

Vel

℞. Gum. Guaiac. ℈j.
Ammoniæ gr. x.
Conserv. Rosæ q. s. M.
ft. Bolus mane et vespere sumendus.

Vel

℞. Gum. Guaiac gr. xv.
Pulv. Antimonial. gr. ij.
Confect. Opiat. gr. x.
Syrup. q. s. M. fiat Bolus.

Vel

℞. Gum. Guaiac. Pulv. ℈j.
Pulv. Ipecac Comp. ℈ſs.
Conserv. Roſæ q. s. M.
ft. Bolus omni nocte capiendus.

niated tincture of this medicine joined to a strong decoction of bark, often proves serviceable in very obstinate cases. Internal medicines, however, without the aid of the external means before noticed, will seldom or never effect a cure in severe and obstinate cases.

Calomel and other preparations of mercury have been given in this disease along with the decoctum sarsaparillæ compositum ; but they seem better adapted for venereal pains than for rheumatic ones. In palliating symptoms and allaying pain and irritation, small doses of the antimonial powder and opium combined with calomel, sometimes proves useful.

Besides these medicines, others of the narcotic tribe, such as cicuta, aconitum, and hyoscyamus, have sometimes have been employed in the cure of chroni rheumatism. We are given to understand by Dr. Guthrie* of Petersburgh, that an infusion of the rhododendron crysanthemum is used by the Siberians for the same purpose with infinite advantage.

In chronic rheumatism it will be absolutely necessary to persevere for a considerable length of time in the use of whatever medicines we employ, otherwise but very little benefit can be derived from them.

If in the course of the disease the patient's rest should be much disturbed throughout the night by the severity of the pains, an anodyne draught may be ordered for him to be taken at bed-time.†

Where the different combinations of bark, guaiacum, opium, antimony, and mercury, have proved ineffectual, very speedy and good effects have been derived from a cautious exhibition of the arsenical solution of Dr. Fowler, as noticed under the head of Intermittents. It may be given with an equal proportion of tinctura opii in doses of ten drops repeated twice or thrice a day in any convenient vehicle, and probably a decoction of the cinchona bark may be as good as any we can employ. It seems, however, to be pretty generally admitted, that it is only in the protracted chronic rheumatism, where the vital powers are much diminished, and the ends of the bones, periosteum, capsules, or ligaments of the joints, are likewise partially affected, that the use of arsenic is likely to prove essentially serviceable, or at all successful.‡ In such cases we can begin with the quantity above mentioned, and so increase the dose gradually according to the effect produced on the stomach and bowels. In some instances, a degree of erythema arises on different parts of the body in consequence of administering this remedy ; and in others, a soreness of the mouth and ptyalism are excited. Costiveness generally ensues ; and this we must obviate by some

* See vol. v. of the Edinburgh Medical Commentaries.
‡ See Dr. Bardsley's Medical Reports.

† ℞. Aq. Ammon. Acet. ʒiij.
——Cinnam. ʒj.
Tinct. Opii gutt. xl.
Vin. Antimon. gutt. xxxv.
Syrup. Papav. Alb. ʒij. M. fiat Hauſtus.

proper laxative taken from time to time. It may be sometimes necessary to intermit its use for a day or two, and then return to it again.

Arsenic will do little good in recent cases of rheumatism, and especially in young subjects; indeed it can rarely be persevered in where the patient is not much reduced in strength, owing to the greatness of its stimulating power; for which reason it succeeds best in old persons.

As a mean of relief in chronic rheumatism, particularly in protracted cases, the Peruvian bark may be employed.

No change whatever will be necessary in the patient's ordinary mode of living in chronic rheumatism, unless it happens to be intermixed with the acute, and then the diet should be cooling, light, and nutritive. In chronic rheumatism, the sinapis or mustard, and raphanus rusticanus or horse-radish, may be taken freely in their natural state. Weak wine-whey, or barley-water, with a small quantity of the crystals of tartar dissolved in it, may be used for common drink. Those who are subject to either kind of rheumatism should wear flannel next to the skin.

Where there are any suspicions of the disease being connected with a syphilitic taint, a long-continued course of mercurial alteratives (see Syphilis) must be entered upon.

Chronic rheumatism sometimes affects the lumbar region, with an acute pain shooting down into the os sacrum, so that the patient cannot stand upright without suffering great pain; neither can he enjoy ease when in bed. This affection is known by the name of Lumbago. The disease sometimes fixes likewise in the hip-joint, and is then called Sciatica. Both of these affections are to be treated nearly in the same manner as chronic rheumatism.

From a paper inserted in the sixth volume of the memoirs of the Medical Society of London, by Dr. Wm. Falconer, it appears that the external application of the Bath waters has proved a most valuable and efficacious remedy in innumerable instances of ischias or the diseases of the hip-joint. The following is the mode of proceeding which has been pursued.

When the patient is tolerably strong, and the symptoms moderate, he is directed to bathe in a hot bath of about 105 degrees of heat. The usual time of continuing in the bath is from fifteen to twenty-five minutes, and it is generally repeated twice or thrice a week. After a few times bathing, the dry pump, as it is quaintly called, or pumping on the affected part without bathing, is advised; and this is tried on the affected part on those days when the patient does not bathe. From fifty to two hundred strokes of the pump are usually given.

The first good effects of the application are to abate the stiffness and pain of the joint, and to afford a greater latitude and extent of motion, which are often perceived after using it three or four times. As the effects of the remedy proceed, the soreness and swelling diminish; the nocturnal pain, which is often very distressing, abates; the power of supporting the body on the lower limbs on the affected side increases; the legs, whether shorter or longer, approach towards their proper dimensions; and the muscles, that were let down and wasted, regain their natural shape, firmness, and plumpness. Where a use of the

waters seem to succeed thus favourably, there is no other remedy employed.

It sometimes happens, however, that the waters will shew their beneficial effects to a considerable extent for a time, and then the amendment seems to be at a stand, but still without any accession of new morbid symptoms, or without any aggravation of the old. In such cases it is found requisite to suspend the use of the waters for a short period, and to apply a blister upon the seat of the pain ; after the healing of which, the application of the waters may be repeated with advantage.

Where it happens that the irritability of the nerves is much excited by a use of the bath, or that it causes profuse perspiration, much caution is required. In instances of the latter kind, unaccompanied by fever, a light infusion of cinchona with aromatics, is generally serviceable : but the tendency to fever is most to be apprehended. If the spot where the uneasiness is felt, be extremely sore, and tender to the touch, and the swelling and pain are considerable, then it will be necessary to be on our guard. Cupping-glasses, with scarifications, are applied in such cases with advantage ; or if the skin be too sore or tender to endure without much pain the suction of a cupping-glass, a large number of leeches have been substituted in the place of the other, and by being repeatedly applied, have proved of great service. In aid of these applications saline cooling purgatives, and the common febrifuge draught, with antimonials, are administered with advantage. For the relief of the pain, which often subsists without fever, it is found necessary to employ opiates ; and a preference is given by Dr. Falconer to the pulvis ipecac. compos. in the quantity of from five grains to twenty, once or twice in the course of the day and night.

If these means prove effectual in procuring an abatement of the symptoms, the bath is cautiously tried, and especially the Cross-bath, which is cooler than the other, and this for a short time only. If it can be borne without aggravating the symptoms, but rather with a soothing effect, it is directed to be repeated after an interval of three or four days, interposing the purgative before mentioned occasionally. When the bath can be borne with ease, the use of the pump in the bath is recommended, as the impetus of the water thrown on the part affected is less than in the dry pump, by the stream being conducted to the part beneath the surface of the water of the bath.

By these means, together with the assistance of a blister on the part, the application of the waters is rendered safe, and often effectual, in cases, we are told, that seemed at first view not to allow their use. To reduce the swelling, and promote a re-absorption of the effused fluid, when that can be safely done, Dr. Falconer directs a trial to be made of the lime-poultice, composed of one part of quick-lime, fallen to powder in the air, and two parts of oatmeal, which being made into a poultice with hog's-lard, and spread thick on a cloth, is to be applied temperately warm to the part. This poultice is to be repeated every night, but to be removed in the morning. It generally produces some degree of moisture or exudation under it, though without raising

a blister; and this gradual local discharge is often an effectual though gradual method of reducing tumours both of the hip and of the knee.

Those who are subject to rheumatic complaints ought carefully to avoid all exposures to cold and wet, and they should go warmly clothed, and wear flannel next the skin.

ORDER III.

OF EXANTHEMATA OR ERUPTIVE FEVERS.

Of the SMALL POX or VARIOLA.

THE diseases of this order affect most people at some period or other of their life, and are of a contagious nature, beginning with febrile symptoms, and followed by an eruption on the skin.

Small pox is a disease of a very contagious nature, supposed to have been introduced into Europe from Arabia, and in which there arises a fever that is succeeded by a number of little inflammations in the skin, which proceed to suppuration, the matter formed thereby being capable of producing the disorder in another person.

Many attempts have been made to communicate the small-pox, as also the measles, to quadrupeds by inoculation; but all in vain.

The small-pox attacks people of all ages; but the young of both sexes are more liable to it than those who are much advanced in life, and it may prevail at all the seasons of the year; but in general is most prevalent in the spring and summer.

It is distinguished into the distinct and confluent, implying, that in the former the eruptions are perfectly separate from each other, and that in the latter they run much into one another. The distinct may often be distinguished from the confluent before the eruption appears, by the mildness of its attack; by the synochal type of the fever, the

late appearance of the eruption, and the absence of typhoid symptoms.

Both species are produced either by breathing air impregnated with the effluvia arising from the bodies of those who labour under the disease, or by the introduction of a small quantity of variolous matter into the habit by inoculation; and it is probable that the variety of the small-pox is not owing to any difference in the contagion, but depends on the state of the person to whom it is applied, or on certain circumstances concurring with the application of it.

Many physicians of eminence are of opinion that the variolous contagion is limited to a narrow sphere, and that it seldom, if ever, is conveyed by the wind to a distance, as some have imagined it capable of being. Dr. Haygarth, in his Sketch of a Plan to exterminate the casual Small-pox from Great Britain, informs us that certain facts appear to exhibit *negative* proofs that the open air is not contaminated to a great distance from the patient; not to one thousand five hundred feet, nor probably to one hundredth part of the space. He mentions, that very few cases have been adduced by those who have corresponded with him on the subject, in which clothes exposed to variolous miasma have been even suspected of conveying infection, and that several have given a negative testimony against this mode of communication. He further notices, that innumerable instances are to be produced where medical men, after exposing themselves to the miasms of an infectious chamber, in a very short time nearly approach persons liable to the distemper, who are yet not infected by the interview, and that inoculators are daily in this situation without communicating the casual small-pox. The period during which infection remains latent in the body, he observes, is determined by the testimony of many to be, in the inoculated small-pox, from the fifth day to the sixteenth, seventeenth, and even the twenty-third: in the casual or natural small-pox, a little but not much longer than the common period in inoculation.

A variety of opinions have been entertained respecting the effect of the variolous infection on the fœtus in utero; a sufficient number of instances, however, have been recorded, to ascertain that the disease may be communicated from the mother to the child. In somes cases, the body of the child at its birth has been covered with pustules, and the nature of the disease has been most satisfactorily ascertained by inoculating with matter taken from the pustules. In other cases there has been no appearance of the disease at the time of the birth, but an eruption and other symptoms of the malady have appeared so early, as to ascertain, that the infection must have been received previously to the removal of the child from the uterus.

Four different states or stages are to be observed in the small-pox; First, the febrile; second, the eruptive; third, the maturative; and fourth, that of declination or scabbing, which is usually known by the name of secondary fever.

When the disease has arisen naturally, and is of the distinct kind, the eruption is commonly preceded by a redness in the eyes, soreness in the throat, pains in the head, back, and loins, weariness and faintness,

alternate fits of chilliness and heat, thirst, nausea, inclination to vomit, and a quick pulse.

In some instances, these symptoms prevail in a high degree, and in others they are very moderate and trifling. In young children, startings and convulsions are apt to take place a short time previous to the appearance of the eruption, always giving great alarm to those not conversant with the frequency of the occurrence.

About the third or fourth day from the first seizure, the eruption shews itself in little red spots (similar to flea-bites) on the face, neck, and breast; and these continue to increase in number and size for three or four days longer; at the end of which time they are to be observed dispersed over several parts of the body.

If the pustules are not very numerous, the febrile symptoms will generally go off on the appearance of the eruption, or they will become very moderate. It sometimes happens, that a number of little spots of an erysipelatous nature are interspersed among the pustules; but these generally go in again as soon as the suppuration commences, which is usually about the fifth or sixth day; at which period a small vesicle, containing an almost colourless fluid, may be observed upon the top of each pimple.

Should the pustules be perfectly distinct and separate from each other, the suppuration will, probably, be completed about the eighth or ninth day, and they will then be filled with a thick yellow matter; but should they run much into each other, it will not be completed till some days later.

When the pustules are very thick and numerous on the face, it is apt about this time to become much swelled, and the eyelids to be closed up; previous to which, there usually arise a hoarseness and difficulty of swallowing, accompanied with a considerable discharge of viscid saliva.

About the eleventh day the swelling of the face usually subsides, together with the affection of the fauces, and is succeeded by the same in the hands and feet; after which the pustules break, and discharge their contents, and then becoming dry, they fall off in crusts, leaving the skin which they covered, of a brown red colour, which appearance continues for many days. In those cases where the pustules are large, and are late in becoming dry and falling off, they are very apt to leave pits behind them; but where they are small, suppurate quickly, and are few in number, they neither leave any marks behind them, nor do they occasion much affection of the system.

In the confluent small-pox the fever which precedes the eruption is much more violent than in the distinct, being attended usually with great anxiety, heat, thirst, nausea, vomiting, and a frequent and contracted pulse, and often with coma or delirium. In infants convulsive fits are apt to occur, which either prove fatal before any eruption appears, or they usher in a malignant species of the disease.

The eruption usually makes its appearance about the third day, being frequently preceded or attended with a rosy efflorescence, similar to what takes place in the measles; but the fever, although it suffers

some slight remission on the coming out of the eruption, does not go off as in the distinct kind; on the contrary, it becomes increased after the fifth or sixth day, and continues considerable throughout the remainder of the disease.

As the eruption advances, the face being thickly beset with pustules, becomes very much swelled, the eyelids are closed up, so as to deprive the patient of sight, and a gentle salivation ensues, which towards the eleventh day is so viscid, as to be spit up with very great difficulty. In children, a diarrhœa usually attends this stage of the disease instead of a salivation, which is to be met with only in adults.

The vesicles on the top of the pimples are to be perceived sooner in the confluent small-pox than in the distinct; but they never rise to an eminence, being usually flatted in; neither do they arrive to a proper suppuration, as the fluid contained in them, instead of becoming yellow, turns to a brown colour.

About the tenth or eleventh day the swelling of the face usually subsides, the hands and feet beginning then to puff up and swell, and about the same time the vesicles break, and pour out a liquor that forms into brown or black crusts, which upon falling off, leave deep pits behind them that continue for life; and where the pustules have run much into each other, they disfigure and scar the face very considerably.

Sometimes it happens that a putrescency of the fluids takes place at an early period of the disease, and shews itself in livid spots interspersed among the pustules, and by a discharge of blood by urine, stool, and from various parts of the body.

In the confluent small-pox, the fever, which, perhaps, had suffered some slight remission from the time the eruption made its appearance to that of maturation, is often renewed with considerable violence at this last-mentioned period, which is what is called the secondary fever; and this is the most dangerous stage of the disease.

It has been observed, even among the vulgar, that the small-pox is apt to appear immediately before or after the prevalence of the measles. Another curious observation has been made relating to the symptoms of these complaints, namely, that if, while a patient labours under the small-pox, he is seized with the measles, the course of the former is generally retarded till the eruption of the measles is finished.* The measles appear, for instance, on the second day of the eruption of small-pox; the progress of this ceases, till the measles terminate by desquamation, and then it goes on in the usual way. Several cases are however recorded in the Medical and Physical Journal, as likewise in the third volume of the Medical Commentaries, in which a concurrence of the small-pox and measles took place without the progress of the former being retarded.

The distinct small-pox is not attended with danger, except when it attacks pregnant women, or approaches nearly in its nature to that of the confluent; but this last is always accompanied with considerable

* See Dr. Duncan's Medical Commentaries, vol. i.

risk, the degree of which is ever in proportion to the violence and permanence of the fever, the number of pustules on the face, and the disposition to putrescency which prevails.

When there is a great tendency this way, the disease usually proves fatal between the eighth and eleventh day, but in some cases death is protracted till the fourteenth or sixteenth. The confluent small-pox, although it may not prove immediately mortal, is very apt to induce various morbid affections.

Both kinds of small-pox leave behind them a predisposition to inflammatory complaints, particularly to ophthalmia and pneumonia; and they not unfrequently excite scrofula into action which might otherwise have lain dormant in the system.

The regular swelling of the hands and feet upon that of the face subsiding, and its continuance for the due time, may be regarded in a favourable light. A sudden disappearance of the eruption, subsidence of the swelling of the face or extremities, suppression of saliva, or depression of the pustules, followed by much prostration of strength, pallor of the skin, great anxiety, oppression at the chest, syncope, convulsions, coma, or delirium, are appearances which denote the greatest danger.

The dissections which have been made of confluent small-pox, have never discovered any pustules internally on the viscera. From them it also appears, that variolous pustules never attack the cavities of the body, except those to which the air has free access; as the nose, mouth, trachea, the larger branches of the bronchiæ, and the outermost part of the meatus auditorius. In cases of prolapsus ani, they likewise frequently attack that part of the gut which is exposed to the air. They have usually shewn the same morbid appearances inwardly, as are met with in typhus gravior, where the disease has been of a very malignant nature. Where the febrile symptoms have run high, and the head has been much affected with coma or delirium, the vessels of the brain appear, on removing the cranium and dura mater, more turgid, and filled with a darker coloured blood than usual, and a greater quantity of serous fluid is found, particularly towards the base of the brain. Under similar circumstances, the lungs have often a darker appearance, and their moisture is more copious than usual.

When a person who has never had the small-pox, is attacked with febrile symptoms after having been exposed to the infection, or in consequence of the disease prevailing epidemically, we ought immediately to advise a strict pursuance of the antiphlogistic plan, debarring him from animal food, impregnating his drink with cooling acids, keeping his body open with gentle laxatives, and above all, exposing him freely to cool air, as, beyond all doubt, there is not a more effectual remedy for moderating the febrile heat produced by this disease, than the application of cool air; and the more urgent the symptoms, the more will the patient stand in need of it; for where the ventilation is free, it is inconceivable how refreshing it proves, and how suddenly it is capable of reducing the pulse, and of moderating all the symptoms.

In the early stage of small-pox, and during the eruptive fever, when

the symptoms run high, we may, in addition to exposing the patient freely to cool air, recommend washing the body partially or generally with cold water. As the quantity, as well, perhaps, as the quality of the pustules depends greatly on the violence and duration of the eruptive fever, and as by mitigating the one we render the other more favourable, it would seem really advisable, as soon as a person is seized with variolous fever, wherein the febrile symptoms are any way high, to have cold water thrown over the body every four or six hours, which plan may be continued until the eruption is completed. The safety and utility of the remedy is recorded in the thirteenth number of the Edinburgh Medical Journal, and is confirmed by my own experience. When had recourse to on the attack of variolous fever, it usually mitigates the head-ach, pain in the back, and other febrile symptoms; a slow and gentle perspiration succeeds, and a mild eruption takes place. Where it is resorted to after the small-pox have made their appearance, and by their quantity and the duration of the fever, a confluent pock is expected, the cold bath seems not only to moderate the febrile symptoms, but likewise to diminish the number of the pustules, and in doing so, greatly to lessen the danger of the disease.

The temperature of the patient's chamber should always be such that he may experience no disagreeable degree of heat, but rather a sensation of cold; and except he complains of being chilly, we need not be afraid of carrying the cool regimen too far.

He should lie on a mattress covered only with a few bed-clothes, a feather-bed being apt to occasion too great an accumulation of heat. If convenient, he should have an apartment to himself, as the heat of a crowded room would be sure to prove injurious; and his body-linen, as well as that of the bed, should be shifted frequently.

In many instances, little more will be requisite than to pursue the steps which have been advised; but sometimes the fever and general inflammation run so high (particularly in adults of a plethoric and robust habit) as to be accompanied with great heat and dryness of the skin, redness of the face and eyes, considerable difficulty of breathing, acute pain in the head, stupor, or delirium; in which case it may be necessary to take away a proper quantity of blood; but in resorting to this operation, great prudence is necessary, for should a fever of a malignant nature, or putrid tendency, accompany the disease, bleeding might prove highly injurious. Indeed it might perhaps be the best practice to recommend it only in those cases where the effects expected from it cannot be procured by other remedies; and even in these local blood-letting by scarification of the temples, or the application of leeches, ought to be preferred. Where the eyes look red and fiery, or coma prevails, topical bleeding may prove a valuable remedy.

The same caution should be observed with respect to a use of purgatives. For the purpose of diminishing excitement in the distinct small-pox, they may prove serviceable if administered in moderation; but if the accompanying fever is of the typhoid kind instead of synocha, then these and other antiphlogistic measures are by no means warrantable. To dislodge the contents of the intestinal tube in such cases

where costiveness prevails, we should only employ the most gentle laxatives, with the occasional use of emollient clysters.

On the coming on of the fever, the stomach in some cases is much disordered, and a constant nausea, or frequent vomiting, is apt to arise; to obviate which, it will be proper to give a gentle emetic, working it off with a few draughts of chamomile-tea.

It is no uncommon occurrence for convulsive fits to attack children some short time previous to the appearance of the eruption, which, although they alarm those who are not conversant with the disease, prognosticate, nevertheless, a favourable event. In this instance, little more will be requisite in general, than to admit cool air freely to the child; but should they occur at a very early period of the disorder, and be repeated frequently with any violence, they then are attended with considerable danger, and ought to be removed, if possible, by giving opium in doses proportioned to the age of the child. About five drops of the tinctura opii will be sufficient for a child of a year old, about eight drops for one of two years old, and so on in a regular gradation.

Blisters are sometimes used in cases of this nature; but from the great length of time which elapses previous to their producing any effect, they seldom prove serviceable.

In those instances where the eruption does not come out kindly, it has been advised to immerse the whole body for a short time in a warm bath; but perhaps it may be more proper only to put the feet and legs into warm water at first, using at the same time a more generous diet; and should these means fail, the other mode of proceeding may then be adopted.

If there be great irritability and restlessness, opium, in small quantities, either with the saline mixture or a grain or two of antimonial powder, will be serviceable.

Where the febrile symptoms run high after the appearance of the eruption, we should give small and frequently repeated doses of antimonials, as advised under the head of Simple Continued Fever.

With the same view of lessening febrile heat and excitement we may employ refrigerant medicines, such as nitre and saline draughts, administering the latter in the act of effervescence.

It will likewise be proper to avoid heat, and to expose the body to cool air. The cool regimen, in its fullest extent, is however by no means so necessary after the completion of the eruption, or where the fever has almost or wholly disappeared, as before. At the same time we must be careful to avoid the opposite and more dangerous extreme, of relaxing too suddenly in the employment of the cool regimen. The use of laxative medicines or clysters, as far as is necessary to prevent costiveness, is to be continued; and with regard to the application of cold, it should at this period be regulated by the patient's feelings.

If, on the other hand, the febrile symptoms continue considerable, notwithstanding the appearance of the eruption, the plan of treatment must not be relaxed. The continued use of gentle cathartics and the cool regimen is then necessary; and at an early period they are the best

means of moderating the eruptive fever; they are now the most effectual for preventing the appearance of the secondary, which is always to be feared where the remission on the completion of the eruption is inconsiderable.

In those cases where the pustules contain a thin watery fluid, and are accompanied with great soreness, uneasiness, loss of strength, and lowness of the pulse, the Peruvian bark should be given in large doses, and be frequently repeated; and although it may perhaps increase the difficulty of breathing and render the expectoration a little more difficult, still its good effects in obviating the symptoms of irritation, and the tendency to putrescency, will greatly overbalance the former.

To assist the effects of the bark, a free use of wine-whey ought to be allowed.

In the confluent small-pox, particularly where there is a putrid tendency, where the pustules are filled with a bloody water, or where petechiæ are interspersed among them, we must also have recourse to the bark of cinchona joined with wine, together with acids, all kinds of which have been much employed in this form of the disease, but more particularly the muriatic and sulphuric, as noticed under the head of Typhus Gravior. Where hemorrhages arise, we may give alum in addition to these remedies.

If the eruptions, after having made their appearance, strike in suddenly, or if the disease has arisen in a person of lax fibres, and is attended with a weak low pulse, and a sinking in of the pustules, then, besides allowing a liberal use of wine-whey, we should apply cataplasms to the soles of the feet, and blisters successively to different parts of the body, paying no regard to their being covered with pustules. Camphor, ammonia, musk, and aromatics, will likewise be advisable medicines. The warm bath will also be proper.

Where the suppuration in the pustules does not go on kindly, owing to the want of rest, it will be proper to give opiates. About forty drops of the tinctura opii may be administered to an adult every night at bed-time, and one or two tea-spoonfuls of the syrupus papaveris albi to young children.

If opiates are given when the excitement is considerable, or if they are found to induce coma, their use will certainly be improper; but in all other cases (more particularly in the confluent small-pox) a quantity of opium sufficient to allay restlessness, provided care be taken to prevent its constipating effects, will be sure to prove beneficial.

The secretion from the glands of the mouth and throat in the confluent small-pox, usually goes on without the help of medicine until near the time of the completion of the suppuration, so that it is only necessary to defend the parts from the matter secreted, by giving mucilaginous drinks, such as barley-water, linseed-tea, or a solution of gum-arabic; but towards the time of its being completed, the secretion is apt to become so thick and viscid, as to be expectorated with the greatest difficulty, and often even to endanger suffocation. In this case

we should give an emetic,* after which the mouth and throat must be washed out very frequently with some proper gargle as below,† or as advised under the head of Inflammatory Quinsy. If the emetic does not afford a permanent relief, we may then apply a blister to the external fauces with some prospect of advantage.

When the swelling of the face begins to subside, if we should find that the extremities do not become puffy and swelled, as they ought to do, cataplasms and blisters may be applied to them, to excite inflammation.

Determination to the head or chest, or other viscera, requires blisters, pediluvium, and sinapisms to the feet.

If a strangury or suppression of urine should ensue in the course of the disease, as sometimes happens, it possibly may be relieved by making the patient walk barefooted several times across the floor, and by giving him small doses of nitre at the same time. Dashing cold water on the legs, as is sometimes practised to solicit the alvine discharge, may also be tried. Should these means fail in affording relief, we ought then to resort to the other remedies recommended under this particular head.

Obstinate vomiting, which, in this disease, often proves a very troublesome as well as dangerous symptom, is most effectually allayed by saline medicines, taken in the act of effervescence, and joined with opium.

Profuse diarrhœa is a troublesome occurrence in the confluent small-pox, particularly in children; but unless this symptom produces a dangerous degree of debility, we should be cautious in checking it, and even when it does occasion considerable debility, the safest plan will be to endeavour to moderate it by very gentle astringents and tonics. There is, perhaps, no instance, except towards the termination of the disorder, in which the diarrhœa can be safely stopped by astringents, and then it is to be done cautiously; and when these medicines, either conjoined with opium, or of themselves, produce too sudden an effect, it must be counteracted by gentle laxatives.

In all cases where there is a propensity to sweating, after the eruptive fever has passed, a cool regimen will be particularly necessary.

In the distinct small-pox there ensues little or no secondary fever; but it regularly attends on the confluent, and is always in proportion to the number of pustules, proceeding probably from an absorption of the matter. This being the case, it may be advisable to open every pustule as soon as the suppuration in it is completed; and in order to moderate the fever, as well as to prevent hectic symptoms and after-suppurations from arising, we ought to employ gentle purging every third or fourth day. In this stage of the disease mild cathartics are highly necessary.

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* ℞ Antimon. Tartarisat. gr. jfs.
Aq. Fontan. ℥j.
Oxymel. Scillæ ℥fs. M.
ft. Haustus.

† ℞. Infus. Rosæ ℥vij.
Mel. Optim. ℥j. M.
ft. Gargarismus.

If at the approach of the secondary fever the pulse is quick, hard and strong, the heat very great, the head much affected, and the breathing laborious, a quantity of blood proportioned to the urgency of the symptoms, may probably be taken away with safety, by means of scarifications or leeches applied to the part most affected; but a use of gentle cathartics, and other antiphlogistic means, seems much more advisable. If on the contrary, the patient is faint, the pustules look pale and much dinted, and the extremities feel cold, with other symptoms of irritation, the fever is then to be considered as of the typhoid kind; and the proper remedies to be employed are Peruvian bark, in whatever form it is found to sit easiest on the stomach, conjoined with wine and aromatics, together with mineral acids, opium, and artificially prepared pure air, or oxygen gas.

To prevent the face from being marked after the confluent small-pox, it has been recommended to bathe it three or four times a day with warm milk and water, and on the seventh or eighth day to apply over its whole surface a mask made of fine cambrick, thinly spread with a soft liniment, composed of olive-oil, white wax, and hog's lard, or with the unguentum spermatis ceti, so as to exclude the external air; which application is to be renewed twice or thrice a day.

When the pustules are numerous on the face, it sometimes happens that the eyes become much affected, and that a loss of sight is the consequence. In those cases, therefore, where the face is much beset with pustules, the use of mild gently astringent collyria, as advised under the head of Ophthalmia, should never be neglected. To prevent the eye-lids from adhering together in such cases, it may be necessary to bathe them from time to time with warm milk, and to besmear them frequently with a little emollient ointment of any kind.

The small pox, particularly when it proves severe, is apt in habits disposed to scrofula to excite that disorder into action, when it otherwise might not have shewn itself. Frequent instances of this nature occur in practice, and prove obstinate to the practitioner, as well as distressing to the patient. In all such cases we must resort to the means advised under that particular head.

In the confluent small-pox as well as the distinct, the patient's strength must be supported by food of a light nutritive nature, such as panado, bread-puddings, preparations of sago, arrow-root, roasted apples, &c.; and for common drink he may take thin gruel or barley-water gently acidulated, together with a little wine-whey now and then, when the febrile symptoms do not run high. If the accompanying fever is of a typhoid nature, a liberal use of wine will be proper.

Of INOCULATION.

EXPERIENCE has taught us that by applying variolous matter to a scratch or wound, so as to occasion an absorption, we shall in general procure fewer pustules and a much milder disease than when the small-pox is taken in the natural way.

Notwithstanding these evident advantages, objections have been raised against inoculation on the score that it exposes the person to some risk, when it is possible he might have passed through life without being attacked by the disease in question; but in reply, it may be urged, that he will be exposed to much greater danger from the intercourse which he must have with his fellow-creatures, by taking the disorder in the natural way.

In objection to inoculation, instances have been adduced to support the probability of a person's being liable a second time to the small-pox, when produced at first by artificial means; but such instances are very rare indeed, besides not being sufficiently authentic; and we may safely conclude, that in most of those cases the matter used was not variolous; but that of some other eruptive disorder, such as the chicken-pox, which may be mistaken for the small-pox by those who are not very conversant with the difference between them.

It has been computed, that a third of the adults die, who take this disease in a natural way, and about one seventh of the children; whereas of those who receive it by inoculation and who are properly treated afterwards, the proportion probably is not greater than one in five or six hundred.

The practice of inoculating is generally supposed to have been introduced into Britain from Turkey, by lady Mary Wortley Montague, about the year 1721, whose son had been inoculated at Constantinople during her residence there, and whose infant daughter was the first that underwent the operation in this country. Some letters, however, of Dr. Williams, Mr. Owen, and Mr. Wright, which may be seen in the Philosophical Transactions for the year 1722, assert, that inoculation was well known in the south of Wales at that time, and had been of long standing. It seems likewise to have been practised in the Highlands of Scotland, before its introduction into England.

Mr. Mungo Park, in his Travels into the Interior of Africa, found that inoculation had been long practised by the negroes on the Guinea coast, and nearly in the same manner, and at the same time of life, as in Europe.

Where inoculation really originated is a matter of doubt, although it has been ascribed to the Circassians, who employed it as a mean for preserving the beauty of their women. It is more than probable, that accident suggested the expedient among the different nations to whom the small-pox had long been known, independently of any intercourse they had with each other; and what greatly adds to the probability of this conjecture is, that in most places where inoculation can be traced back for a considerable length of time, it seems to have been practised chiefly by old women before it was adopted by regular practitioners.

Many physicians held the practice of inoculation in the greatest contempt at first, from its supposed origin; others again discredited the fact; while others, on the testimonies of its success in distant countries, believed in the advantages it afforded, but still did not think themselves warranted to recommend it to the families they attended; and it was not until after the experiment of it had been made on six criminals (all

of whom recovered from the disease and regained their liberty,) that it was practised in the year 1726 on the royal family, and afterwards adopted as a general thing.

To insure success from inoculation, the following cautions should strictly be attended to:

1st, That the person should be of good habit of body, and free from any disease apparent or latent, in order that he may not have the distemper, and a bad constitution, or perhaps another disorder, to struggle with at the same time.

2dly, To enjoin a temperate diet and proper regimen; and where the body is plethoric, or gross, to make use of gentle purges, together with mercurial and antimonial medicines, as hereafter mentioned.

3dly, That the age of the person be as little advanced as possible, but not younger, if it can be avoided, than four months.

4thly, To choose a cool season of the year, and to avoid external heat, either by exposures to the sun, sitting by fires, or in warm chambers, or by going too warmly clothed, or being much in bed.

5thly, To take the matter from a young subject, who has the small-pox in a favourable way, and who is otherwise healthy and free from disease; and when fresh matter can be procured, to give it the preference.

Where matter of a benign kind cannot be procured, and the patient is evidently in danger of the casual small-pox, we should not however, hesitate a moment in recommending inoculation from any kind of matter that can be procured, as what has been taken in malignant kinds of small-pox, has been found to produce a very mild disease. The mildness or malignity of the small-pox appears, therefore, to depend little, if at all, on the inoculating matter. Variolous matter as well as the vaccine, by being kept for any length of time, particularly in a warm place, is apt, however, to undergo a decomposition by putrefaction, and then another kind of contagious material has been produced.

In inoculating, the operator is to make the slightest puncture or scratch imaginable in the arm of the person, rubbing that part of the lancet which is besmeared with the matter repeatedly over it, by way of insuring the absorption; and in order to prevent its being wiped off, the shirt-sleeve ought not to be pulled down until the part is perfectly dry.

In preference to either puncturing the arm, or scratching it in a direct line, it has been recommended to introduce the lancet armed with the matter obliquely beneath the cuticle, so as to wound very slightly, and occasion little or no flow of blood. This mode may probably be preferable; but in withdrawing the point of the lancet, it will be right to press the wound with the finger, that the parts in contact with the matter may wipe it off the lancet, and thereby secure the success of the operation. When inoculation is performed in any of these ways, the application of plasters or bandages will be unnecessary.

The matter of small-pox must be applied to a wound, in order to induce the complaint. Dr. Rush informs us, he could not induce the

small-pox by rubbing the matter on the entire skin; and he likewise mentions, that a negro girl took some variolous matter mixed with a dose of physic, which produced no sensible effect.

A singular circumstance attending inoculation is, that when this fails in producing the disease, the inoculated part nevertheless sometimes inflames and suppurates, as in cases where the complaint is about to follow; and the matter produced in such cases is as fit for inoculation as that taken from a person actually labouring under the disease. The same happens very frequently in inoculation for the cow-pox.

If on the fourth or fifth day after the operation no redness or inflammation is apparent on the edges of the wound, we ought then to inoculate in the other arm in the same manner as before; or, for greater certainty, we may do it in both.

Some constitutions are incapable of having the disease in any form. Others do not receive the disease at one time, however freely exposed to its contagion, even though repeatedly inoculated, and yet receive it afterwards by merely approaching those labouring under it. Dr. Huxham* makes mention of cases of this nature. His words are, "I know an old nurse, and one apothecary, who for many years attended persons, and a great number too, in the small-pox, and yet never had them; nay, many that have industriously endeavoured to catch the infection, by frequenting the chambers of the sick, have done it without effect, and yet some of these persons some months or years after, have been seized with the small-pox."

On the coming on of the febrile symptoms, which is generally on the seventh day in the inoculated small-pox, the patient is by no means to be suffered to take to his bed: but, on the contrary, must be constrained to keep up, and to be as much in the cool air as possible; and if thirsty, he may partake freely of some cooling antiseptic drink. As the number of pustules would probably be much increased by lying with another person, the patient should always have a bed to himself.

From the time that the matter is introduced into the system to the appearance of the eruptions, it will be necessary to observe a total abstinence from all animal food, and to give some gentle purgative every second or third day, if the person is of a gross habit; and on the intervening ones he may take a dose of the following preparative powder: Mix a drachm of prepared chalk with twelve grains of calomel, and one grain of tartarised antimony, which for an adult may be divided into three doses, and for a child of a year old, into twelve.

Some late experiments might induce us to believe that preparation has little or no effect on the future eruption, and that the cause of its mildness in the inoculated small-pox is to be ascribed to the operation itself, independent of any thing else. Mons. Dessarts, in the sitting of the French National Institute, is said, however, to have adduced a number of facts to prove that the natural small-pox is rendered much milder by the use of mercurial remedies, and probably the inoculated disease may likewise be influenced by them. Indeed it appears from

* See his Treatise on Fevers, Small pox, &c.

the experiments of Van Woensel, that calomel, or muriated mercury, given as an alterative for some days before inoculation, and till the eruptive fever commences, does with certainty render the disease mild.—A singular circumstance mentioned by the same author is, that either of these preparations of mercury, triturated with variolous matter, incapacitates it from conveying the disease by inoculation.

The mode of treating the small-pox being the same, whether it arises naturally, or from inoculation, a reference must be had to the plan which is laid down in the preceding pages; and as purging is not less necessary after the small-pox by inoculation than by the natural way, it ought by no means to be neglected.

Various plans have been proposed, with a view wholly to banish the casual small-pox. Dr. Haygarth* has bestowed much attention on this subject; and were the regulations pointed out by him to be rigidly enforced, there is reason to believe they would be found sufficient for the purpose. A surer and more effectual way, however, to eradicate the disease, is by inoculating with vaccine matter every adult who never has had the small-pox; as likewise every child soon after its birth.

Of the COW-POX, or VARIOLÆ VACCINÆ.

In many of the dairy counties it has been long known that the cows are liable to an eruption on their paps or udders, which was occasionally communicated to the hands or arms of those who milked them, producing an ulcer, and some degree of fever; and it had been observed by the people of those counties, that those who had undergone this disease, known by the name of cow-pox, were not liable to the small-pox.

The disease had not, however, undergone any medical investigation until Dr. Jenner, then of Berkley in Gloucestershire, paid particular attention to it. He very satisfactorily ascertained that it was a much milder disease than the small-pox, and that the fact was true that it secured those who had been infected with it from afterwards being liable to variolous infection. He also observed that the vaccine-pox is not infectious, but by inoculation; and that on this account it might be inoculated in a family without endangering others; a circumstance of the greatest importance. On the suggestions of Dr. Jenner, many practitioners were induced to adopt the practice of substituting the one disease for the other, and its efficacy is now fully established.

With respect to the origin of the disease in the cow, we are informed by Dr. Jenner, that he traced it to the diseased heels of horses which had been affected with the grease; and by the person appointed to apply the dressings to them, not paying a due attention to cleanliness, and incautiously bearing his part in milking the cows, with some particles of the infectious matter adhering to his fingers, he has communicated the

* See the Sketch of a Plan to exterminate the casual Small-pox from Great Britain.

disease to them. From numerous experiments made, however, at an early period, by the late Dr. Woodville, and by Mr. Coleman, Professor at the Veterinary College, with the matter of grease, taken in the various stages of that complaint, no such effect has been produced upon cows. Neither were inoculations with this matter, nor with several other morbid secretions in the horse, productive of any effects upon the human subject, which by no means accord with the facts adduced by Dr. Jenner on this point.

Some communications through the medium of the Medical and Physical Journal (see vol. iv. pages 381 and 466,) in consequence of still later experiments, seem however to give support to Dr. Jenner's opinion as to the origin of the disease.

On its first investigation, some circumstances led to the supposition that the cow-pox and small-pox were originally one and the same disease; the latter being derived from the animal at some remote period, and having undergone in the lapse of years, and by the influence of various constitutions, the changes we now experience. Subsequent facts have, however, invalidated this opinion.

From various experiments it appears that the vaccine disease and the small-pox are not susceptible of intermixture, but that each preserves its distinct character under all circumstances. At the Small-pox Hospital it has been noticed, that when the vaccine and variolous fluids are mixed together, and thus inserted, sometimes the vaccine pustule, at others the variolous, has been produced, each of them retaining its characteristic marks throughout. Again, it has been found, that when the two fluids are inserted separately, and so near together, that the two pustules which follow spread into one, by inoculating with the fluid taken from one side of it, the vaccine pustule alone will be produced, while the fluid taken from the other excites the genuine variolous pustule, with the general eruption of small-pox on the body. Another point of dissimilarity between the variolous and vaccine diseases is this: the inoculation of the former we well know supersedes the natural disease many days after exposure to infection.

The effect produced by submitting persons to the influence of variolous and vaccine matter at the same time, is, that they both prove effective; for the vaccine vesicle proceeds to its acme in the usual number of days, and the maturation of the variolous pustules is attended with a pustular eruption on different parts of the body; but when variolous matter is not inserted until the ninth day after the inoculation with vaccine matter, the action of the variolous seems to be wholly precluded.

The variolous and vaccine fluids, inoculated about the same time, restrain the action of each other. The vaccine vesicle, in this case, is smaller, and proceeds more slowly to its maturity, and the variolous pustules are small, hard, and shining, producing only a small particle of matter at their apices.

The nipples of the cow being once affected, the disorder is communicated to the dairy-maids, and other assistants employed in milking,

and by them it is spread through the farm, until at last most of the cattle experience its consequences.

The disease appears on the nipples of the cows in the form of irregular pustules, which on their first appearance are commonly of a colour somewhat approaching to livid, and are surrounded by an erysipelatous inflammation, according to the report of Dr. Jenner; but Dr. Woodville seems to think that it is rather an indurated tumefaction of the skin which surrounds the pustules, than an inflammation of an erysipelatous nature. Unless proper remedies are applied in time, these pustules soon degenerate into phagedenic ulcers, which prove extremely troublesome; the animals then become much indisposed, and the secretion of milk suffers a considerable diminution.

Inflamed spots now begin to appear on different parts of the hands and wrists of the domestics employed in milking, which run on quickly to suppuration, assuming at first the appearance of small vesications produced by a burn. Most commonly they come out about the joints of the fingers, and at their extremities; but whatever parts are affected, if the situation will admit, these superficial suppurations put on a circular form with their edges more elevated than their centre, and of a colour distinctly approaching to blue. In consequence of absorption, tumours appear in each axilla, the system becomes affected, the pulse is quickened, and rigors, with general lassitude and pains about the limbs and loins, with a vomiting, come on. In some instances, the head is much affected, and a delirium arises.

These symptoms varying in their degrees of violence, usually continue for three or four days, leaving ulcerated sores about the hands, which from the sensibility of the parts are very troublesome, and commonly heal slowly, becoming not unfrequently phagedenic, like those from which they sprung.

The lips, nostrils, eyelids, and other parts of the body, are likewise affected sometimes with sores, in consequence of being heedlessly rubbed or scratched with the patient's infected fingers.

Dr. Jenner informs us that he had never met with any case of the cow-pox, either taken naturally, or produced artificially, which proved fatal; but by Dr. Woodville we are told, that out of five hundred cases of inoculated cow-pox under his care, one proved fatal, which was a child at the breast, on the eleventh day after the matter had been inserted in the arm.

From that occurrence, and a few cases in which the febrile symptoms ran high, this gentleman was at first very adverse to the vaccine inoculation; but from further trials he latterly gave it, with almost every other practitioner, the most decided preference.

The few instances of death which have occurred from vaccine inoculation, since it has been more generally practised, may probably be referred with much justice to some unknown peculiarities of the constitution; to intervening disorders independent of the vaccine, and to inflammation excited by accidental causes in young children, especially when they have been ill fed and badly nursed—circumstances not uncommon among very poor people.

When the pustules are numerous, as sometimes happens where the disease has been received immediately from the cow, a considerable degree of fever attends; but when it has arisen from inoculation, few or no pustules are to be observed, except immediately round the wound in the arm; and little or no inconvenience is experienced.

A more general knowledge of the disease than what we had at first, has ascertained it to be an undoubted fact that the vaccine virus is greatly modified, and rendered much milder, by passing through different habits; and that although the cow-pox has proved in many instances a severe disorder in those who received the infection immediately from the animal, still, in a few instances only, have the symptoms run high, or has the least inconvenience been experienced, where proper matter taken from the human subject was used for inoculation.

In the few cases which have been brought forward, where a numerous eruption, preceded by a fiery redness, took place, we should attribute it to something wrong in the habit of body; to the intervening of some other eruptive disease; or possibly to the having inoculated with matter which had undergone a decomposition, in consequence of putrefaction, or some other cause not obvious.

A use of medicine seems wholly unnecessary in the cow-pox, except in those cases of the natural disease where much febrile heat attends; and then the antiphlogistic plan ought to be pursued.

The vaccine virus is certainly of a very singular nature, inasmuch as that a person who has been infected by it, is found to be for ever after secure from the infection of the small-pox; neither exposure to variolous effluvia, nor the insertion of the matter into the skin, being capable of producing the disease. Many direct experiments made by innumerable practitioners, prove that the susceptibility of the small-pox is totally destroyed by inoculating with the vaccine matter. The permanency of the effect was indeed a matter of some doubt, but that is now fully established. It was said at first, that although the cow-pox destroyed the susceptibility of the small-pox, still it possessed not the same power with regard to itself, as a person might have the disease more than once.

Instances certainly have been adduced of the cow-pox taking place a second time; but they are of very rare occurrence, and should be looked on as irregular. The same has happened with the small-pox.

In Dr. Jenner's first treatise he mentions that the small-pox is not always a security against the cow-pox, and that although the susceptibility of the virus of the cow-pox is for the most part lost in those who have had the small-pox, yet in some constitutions it is only partially destroyed, and in others it does not appear to be in the least diminished. A more intimate knowledge of the disease has convinced us of the fallacy of this opinion.

Soon after Dr. Jenner's first publication on the vaccine disease, a few instances were adduced, tending to invalidate his supposition of the preventive power of the cow-pox with regard to variolous infection; but these he considers to have been cases of a spurious disease, and therefore not affecting his general conclusion.

In using this term, he does not mean, however, to imply that there is a true and false cow-pox, but merely to express an irregularity or difference from that common form and progress of the vaccine pustule from which its efficacy is inferred. Those who perform vaccination ought therefore to be well instructed, and should have watched with the greatest care, the regular process of the pustule, and learnt the most proper time for taking the matter.

A few cases of still later occurrence have also been brought forward by Mr. Goldson* of Portsmouth, and others, with the view of proving that the inoculated cow-pox is not a permanent security against the infection of the small-pox; but a failure in one or two cases out of more than thirty thousand, although ever so well substantiated, should be considered in no other light than as a casual irregularity, upon which no solid determination can, or ought to be grounded. Instances of the like nature have been known to occur likewise among persons inoculated with variolous matter, and when they are met with, ought to be looked on as anomalous.

There can be little doubt, however, that some of the failures are to be imputed to the inexperience of the early vaccinators, and it is by no means unreasonable to expect that further observation will yet suggest many improvements that will reduce the number of anomalous cases, and furnish the means of determining with greater precision, when the vaccine disease has been effectually received.

Persons who have been vaccinated and passed through the cow-pox with all the usual accompanying symptoms, and who have afterwards taken the small-pox, of which a few instances may have happened, have generally imperfect pustules, which die away, in a few days, without exciting any constitutional complaint; but the matter taken from these pustules will communicate the small-pox. This circumstance has been brought forward by the anti-vaccinists as a proof that persons who have had the cow-pox, may afterwards take the small-pox by inoculation, and otherwise not making the proper distinction between local and constitutional infection; or perhaps not understanding how any one can communicate a disease to others, with which he is not himself infected.

We are informed by Dr. Jenner that the sources of a spurious cow-pox are as follow:

1st, That arising from pustules on the nipples or udder of the cow, which pustules contain no specific virus.

2dly, From the matter (although originally possessing the specific virus) which has suffered a decomposition either from putrefaction, or from any other cause less obvious to the senses.

3dly, When the matter is taken from an ulcer in an advanced stage, which ulcer arose from a true cow-pox: and,

4thly, He supposes a spurious disease to arise from matter produced on the human skin, from contact with some peculiar morbid matter generated by a horse.

* See his Cases of Small-pox subsequent to Vaccination.

The characteristics of the true cow-pox are as follows, viz. a circumscribed, circular, elevated eruption, surrounded by a red halo or efflorescence; smooth surface; brown, black, or mahogany and tamarind-stone coloured, long-adhering scab.

From a chymical analysis of vaccine matter by some French physicians, it was found to consist of water and albumen.

The succeeding arguments have been urged in favour of inoculation for the cow-pock over that for the small-pox.

1st, Of several thousand persons who have had the inoculated cow-pock, only one or two have died.

2dly, Very few well-attested instances have been produced out of many thousands of the above persons, known to have had the inoculated vaccine pock, and who were subsequently inoculated for the small-pox, of this disease being afterwards taken; although many of these were also exposed to the infectious effluvia of the natural small-pox. And traditionally, this fact has been established time immemorial, with regard to the casual cow-pox

3dly, It may safely be affirmed, that the inoculated cow-pock is generally a much slighter disease than the inoculated small-pox; and that the proportion of severe cases in the latter is to the former as at least ten to one.

4thly, It does not appear that the genuine vaccine pock can be propagated like the small-pox, by effluvia from persons labouring under it. Hence, if the vaccine inoculation should be universally instituted in place of the small-pox, it is reasonable to conclude, that this most loathsome and fatal malady will be extinguished.

5thly, It does not appear that the vaccine poison, like that of the small-pox, can be conveyed so as to produce the disease indirectly from diseased persons, by adhering to clothes, furniture, bedding, letters, &c. Hence no danger of its propagation in these channels is to be apprehended from the universal practice of the inoculation of the cow-pock.

6thly, It has been found, that a person whose constitution has distinctly undergone the vaccine disease, is in future unsusceptible of the same disorder. Hence no objection can be made to the new inoculation, as was once urged, on account of its being believed, that by the commutation of the small-pox for the vaccine pock, an eruptive disease would be introduced, to which the same person would be repeatedly liable.

7thly, It does not appear that those who have already gone through the small-pox, are susceptible of the vaccine disease, as was at first believed. Hence no objection can be urged on the score of persons who have already gone through the small-pox, being liable to a new infectious disease, by the introduction of the vaccine inoculation.

8thly, Experience shews that there is no reason to apprehend the smallest chance of deformities of the skin from the vaccine inoculation.

9thly, The extensive practice of the vaccine inoculation, and the accounts of the disease in the casual way, do not shew that any other dis-

case will be excited subsequently, which is peculiarly imputable to the new practice.

On a review of these arguments founded on facts, there can remain no doubt but that the vaccine inoculation will soon wholly supersede and do away the variolous. Could all parents be persuaded to inoculate their children with vaccine matter soon after birth, the small-pox might be entirely eradicated in time. The introduction of this species of inoculation generally throughout both the army and navy, and its extension to France, Spain, Germany, and every part of the continent, as well as to both the Indies, fully stamp its value and efficacy, and give us reason to hope that it will shortly be adopted by every nation of the earth with whom we have the least communication.

In inoculating for the vaccine disease, we should carefully attend to the following circumstances:

1st, That the matter should not be taken later than the ninth day of the disease.

2dly, That the fluid should be perfectly transparent, as it is not to be depended upon, if it has become in any degree opaque.

3dly, That the matter, if not used immediately, should be allowed to dry gradually and thoroughly before it is laid by for future use.

4thly, That the punctures can scarcely be made too superficial, and on no account should more than one be made in each arm.

5thly, That attention should be paid to repress, as soon as may be, any excess of inflammation that may happen to arise; and this is best done by cold and restringent applications.

From the report of the physicians of the Vaccine Pock Institution, it appears that the matter of a single pustule, being mixed with one quarter of an ounce measure of warm water, such diluted matter excited as distinct a vaccine pock by inoculation, as an equal quantity of undiluted matter. A pock so excited, was not attended with less inflammation, or constitutional affection, than that excited by a large quantity of undiluted matter; which points out an easy method of inoculating several persons from a single vaccine pock—a great conveniency indeed, when the poor to be inoculated at one time, are very numerous.

Of the CHICKEN-POX, or VARICELLA.

THIS disease, like the small-pox, seems to depend upon a specific contagion, and affects a person but once in his life.

The eruption is sometimes preceded by chilliness, succeeded by flushings and heat, pains in the head and back, thirst, restlessness, and a quick pulse; but at other times no such symptoms are perceptible. About the second or third day, the pustules become filled with a watery fluid, which is never converted into yellow matter, as in the small-pox (to the milder species of which it seems, however, to bear some affinity;) and about the fifth day they usually dry away, and are formed into crusts or scabs.

No danger ever attends the chicken-pox.

The small-pox and chicken-pox differ, in the eruption of the former being preceded by a fever of certain duration, while that of the latter is either preceded by none, or one of uncertain continuance; in the vesicles appearing much earlier in the chicken-pox than in the small-pox, and about the second or third day being filled with serum; in the matter of the former never acquiring the purulent appearance, which it always does in the distinct small-pox, and in the crusts which cover the pustules being formed about the fifth day, at which time those of the small-pox are not at the height of their suppuration.

These distinguishing marks it will be necessary to attend to, as there is great reason to suppose the chicken-pox has not only been sometimes mistaken for small-pox, but that its matter has been used for that of small-pox in inoculation, to which may be ascribed many of the supposed cases of small-pox having appeared a second time in the same person.

In general, it is only necessary to make use of a spare regimen on the first appearance of the eruption, and to give one or two cooling purgatives afterwards; but should the febrile symptoms run high, it may then be advisable to make the patient take frequent small doses of some antimonial, with saline draughts and nitre, as advised under the head of Simple Fever, or the distinct Small-pox, drinking plentifully at the same time of cold diluting liquors, and keeping the body open with gentle laxatives, or emollient clysters. The like treatment will also be proper in the swine-pox, which is indeed only a species of the varicella.

Of the MEASLES, or MORBILLI.

THIS disease is a species of catarrhal fever, in which there is a determination of acrid matter to the surface of the body, shewing itself in red spots over every part of it, but which never come to any suppuration, as in the former disorders.

In systems of nosology, several varieties of the measles are mentioned, but they may all be comprehended under two heads; the one attended with more or less of the symptoms of general inflammation; the other accompanied by a putrid diathesis.

Scarlatina sometimes resembles the measles so exactly as not to be easily distinguishable; though this be a matter of great importance, because the method of cure in the two diseases is extremely different. The redness of the scarlet fever is more equally diffused than in the measles, and is not in distinct spots with the natural colour of the skin interposed; yet in a few cases it has been observed so. In the measles, the eruption rises more above the skin, and occasions a manifest roughness to the touch, which is hardly observable in the scarlet fever, except a very little roughness sometimes in the arms. In the scarlet fever there is seldom any cough; the eyes do not water much, and the eyelids are not red and swoln; all which rarely fail to attend the measles. The time

of the eruption is likewise different; for it appears in the scarlet fever both in the face and arms on the second day; but in the measles it begins only about the third day to be visible on the chin and breast, and does not come to the arms and hands till the fourth or fifth day.

The measles may prevail at all seasons of the year as an epidemic, but the middle of winter is the time they are usually most prevalent, and they attack persons of all ages, but children are most liable to them. They prove rather unfavourable to such as are of a plethoric or scrofulous habit. Like the small-pox, when genuine, they never affect persons but once, their contagion appearing to be of a specific nature.

From a number of cases lately observed at New-York, when the measles were very prevalent there, it appears, however, that spurious forms of the disease, insufficient to protect the system from subsequent attacks, occur in a manner very analogous to the spurious appearances of the small-pox and of the variolæ vaccinæ.* For many persons, who on former occasions of the measles prevailing, and after exposure to their contagion, had exhibited certain irregular appearances of febrile, catarrhal, and eruptive symptoms, mistaken for the true disease, were afterwards attacked with measles in an exquisitely genuine form. The fact is likewise noticed by Dr. Willan,† and he mentions that the rubeola sine catarrho appears to be an unusually mild form of the disorder, which does not destroy the susceptibility to an attack in future. Two instances of its recurrence happened among his own children, at an interval of two years. In a later publication‡ he informs us, that he has since seen other cases of the same kind, wherein the efflorescence without fever or catarrhal symptoms having declined, there appeared, on the fourth day from its commencement, a new efflorescence, and violent disorder of the constitution.

The eruption of the measles is usually preceded by a chilliness and shivering, succeeded by heat, thirst, anxiety, pains in the head, back, and loins, heaviness, and redness of the face and eyes, with an effusion of tears, swelling of the eyelids, nausea, and probably a vomiting of bilious matter; and with these symptoms there are a dry cough, hoarseness, hurried respiration, difficulty of breathing, frequent sneezing, and a discharge of acrid water from the nostrils. The pulse is at the same time frequent and strong.

In alarming cases, spasms of the limbs, subsultus tendinum, delirium, or coma supervene. This last symptom, however, so frequently attends the eruptive fever of measles, that by some practitioners it is regarded as one of its diagnostics.

In measles, as in other febrile diseases, the symptoms generally suffer some remission towards the morning, returning, however, in the evening with increased severity.

* See the New-York Medical Repository, vol. v. No. 3.
† See his Reports on the Diseases of London, 1799, p. 207.
‡ See his Description and Treatment of cutaneous Diseases, order iii. part 1.

About the third or fourth day small red spots, somewhat similar to flea-bites, appear in clusters about the face, neck, and breast, and in a day or two more, the whole body is covered with them. They do not rise into visible pimples, but by the touch are perceived to be a little prominent.

The febrile symptoms do not, however, abate on the appearance of the eruption, as happens in the small-pox; but, on the contrary, are usually much increased, and they do not cease till after the desquamation takes place. The cough, hoarseness, difficulty of breathing, and defluxion from the eyes and nostrils, seem likewise greatly aggravated.

On the fifth or sixth day the spots commonly begin to dry away about the face, never having proceeded to any kind of suppuration; and about the eighth or ninth day they disappear on the breast, and other parts of the body, leaving small scales behind them, which soon afterwards fall off. About this period it is no uncommon occurrence for a diarrhœa to ensue.

The febrile and other symptoms being mild, a gentle diarrhœa, a free and copious expectoration, a moisture on the skin at the appearance of the eruption, and an early and free desquamation, denote a favourable termination of the disease; but a high degree of fever, hot and parched skin, hurried and difficult breathing, flushed countenance, unusually hard pulse, severe diarrhœa, the vomiting continuing after the eruption, great pain in the head and eyes after it, considerable degree of coma or delirium, the eruption becoming of a livid hue, with great prostration of strength, small intermitting pulse, petechiæ, and other marks of putrescency, point out the highest degree of danger.

The consequences attendant on the measles are frequently more to be dreaded than the immediate disease; for although a person may get through it, and appear for a time to be recovered, still hectic symptoms and pulmonary consumption shall afterwards arise and destroy him, or an obstinate ophthalmia will ensue.

Measles, as well as the small-pox, not unfrequently call into action a disposition to scrofula, where such happens to exist in the habit.

Another bad consequence of the measles is that the bowels are often left by them in a very weak state; a chronic diarrhœa remaining, which has sometimes proved fatal. Dropsy has also been known as a consequence of measles.

A singular circumstance attending the contagion of the measles is, that if it be taken a sufficient time before inoculation for the small-pox, so that the eruption may commence before the variolous fever comes on, it stops the progress of the small-pox in the inoculated wound, and delays it till the measle fever has finished its career.

The morbid appearances to be observed on dissections of those who die of the measles, are pretty much confined to the lungs and intestines; the former of which always shew strong marks of inflammation, with sometimes a tendency to sphacelus.

Where the patient dies under the eruption, the trachea, and larger branches of the bronchiæ, as in the small-pox, are often found covered with it; which may account for the increase of the cough after the appearance of the eruption.

In some instances, the measles make their attack in a mild manner, and go through their natural course without medical aid; but in others, the febrile symptoms run high, particularly after the appearance of the eruption, and are accompanied with a strong pulse, much coughing, great difficulty of breathing, and other symptoms of pneumonic inflammation; in which cases it will be proper to draw off a quantity of blood proportioned to the age and habit of the patient. We should, however, be careful never to draw blood unnecessarily, nor to take a greater quantity away, than what may really be requisite, as we might thereby induce debility, and occasion a slow recovery. Topical bleeding by means of leeches to the chest or head, when symptoms of local inflammation in either of these are apparent, may be more advisable than venesection. In those instances where the pulse is weak, and, from the nature of the epidemic, we may have strong reasons to apprehend an accompanying fever of the typhoid kind, or a disposition to putrescency, bleeding ought never to be adopted.

During the whole course of the disease it will be highly proper to keep the body open, and therefore, if costiveness prevails, it should be obviated by giving cooling laxatives, such as the neutral salts, or else emollient clysters. Should the difficulty of breathing and oppression at the chest not be relieved by the bleeding, and other antiphlogistic means, a blister may then be applied in the neighbourhood of the part or between the shoulders. In removing local inflammation, the application of a blister often proves a valuable remedy.

The cough being usually very troublesome, it will be necessary to make frequent use of some demulcent pectoral, either of an oily or mucilaginous nature, as advised under the heads of Catarrh, Pleurisy, and Peripneumony, which will likewise sheath the throat, and obviate that rawness and soreness of it which are generally much felt. Besides using pectorals, the patient may drink freely of barley-water, linseed-tea, or the decoctum hordei compositum gently acidulated with lemon-juice.

Where the cough proves very troublesome, and is attended with great difficulty of breathing, or soreness at the chest, inhaling the steam arising from warm water and vinegar may prove serviceable. A pediluvium might be a good auxiliary.

If the febrile symptoms run high, and great heat, thirst, and restlessness prevail, small nauseating doses of antimonials may be given every two or three hours, as advised under the head of Simple Continued Fever, in order to determine to the surface of the body.

In this, as well as in other cases of excitement, it will be advisable to have recourse to nitre and saline draughts, along with antimonials, whenever the inflammatory symptoms run high.

When the cough harasses the patient much by night, so as to deprive him of rest, it may be necessary to give him an opiate about bed-

time. The tinctura opii may be used for adults, combined with some diaphoretic;* but for children it will be better to substitute the syrupus papaveris albi. Opiates are, however, to be administered with great caution in this disease, as well as in all other inflammatory ones, and ought never to be employed where there is much fever present, with great difficulty of breathing. When these symptoms have been removed by timely bleeding, and the cough and watchfulness are those only which are urgent, opiates will prove both safe and efficacious.

In formidable cases of measles, when the urgency of the cough, the quick, difficult, anxious, or laborious respiration, with a high fever denote a dangerous disease, but in which blood-letting, or the exhibition of opium, may be thought equivocal, we may recommend full doses of the tinctura digitalis. In such cases the fever is allayed, respiration relieved, and the bowels relaxed, by its means; whereas the very reverse is frequently the consequence of opium. Hence its superiority in many instances.

If a severe purging should arise, we may moderate it by giving astringents joined with opium; but as a gentle diarrhœa proves serviceable, it ought not to be suppressed, unless it is violent. Should a putrid tendency prevail, we must then prescribe a liberal use of bark and other antiseptics, particularly the mineral acids, as noticed under the head of Typhus Gravior.

When the eruption of measles disappears before the proper period, and great anxiety, delirium, or convulsions take place, the indication will be to restore the eruption to the skin. To effect this, immediate recourse must be had to the warm bath, blisters to the chest and legs, and the administration of wine properly diluted with warm water: ammonia, camphor, æther, and antimonials, will be the best medicines.

Throughout the whole course of the disease the patient ought to be confined to his bed, and to avoid any exposure to cold air, which might repel the eruption; but in observing this precaution, he is not to run into the opposite extreme, and excite external heat, either by loading himself with bed-clothes, or by not allowing a sufficient ventilation through his chamber. The degree of temperature should be regulated by the patient's feelings.

A diluent and antiphlogistic diet being one of the best means of obviating inflammatory complaints, we ought to recommend it in the early stages of measles; but in managing it properly, we should recollect its tendency to produce debility, and in weak habits be careful not to push it too far. Where the disease shews a malignant and

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* ℞. Aq. Ammon. Acetat. ℥ss.
—Puræ ℥j.
Spirit. Æther. Nitros. gutt. xx.
Vin. Antimon. gutt. xxx.
Tinct. Opii gutt. xl.
Syrup. Tolutan. ℥ij. M.
ft. Haustus.

putrid tendency, a diet of this nature would be highly improper. In such cases, a quantity of wine proportioned to the age of the patient, the urgency of the symptoms, and the effect it produces, ought to be allowed, in addition to the bark, acids, and opiates.

After the disappearance of the eruption, it will be proper to give one or two doses of some cooling purgative. This practice, although disregarded by many, seems nevertheless worthy of attention, as ophthalmia and other troublesome complaints may probably be prevented by conforming to it.

If a difficulty of breathing, pain in the side, and cough, should ensue in consequence of the measles, it will be advisable to take away a proper quantity of blood, in order to remove the inflammatory state of the system, which has been induced by the disease ; besides which, the patient must pursue the other steps advised under the head of Incipient Phthisis Pulmonalis, making use of milk and vegetable diet, breathing as pure an air as possible, and taking daily horse exercise ; but he should carefully avoid cold.

As a weeping from the eyes and slight ophthalmia are apt to ensue after the measles, it may be right to wash them occasionally with a little rose-water, in which a few grains of vitriolated zinc have been dissolved, and to avoid exposure to any glaring light.

Having gone through the treatment of measles, it only remains to be observed, that the disease may be propagated by inoculation, as well as the small-pox. Dr. Home, of Edinburgh, appears to have been the first who actually made the experiment, and from not being able to collect either matter or a sufficient quantity of broken cuticle at the time of desquamation to produce the disease, he drew blood from the most superficial cutaneous vein, where the eruption was thickest. This received on cotton, he applied to a wound made, on each arm of the person to be inoculated.

We are informed by him, that he inoculated twelve persons in this way, in all of whom the operation succeeded equal to his hopes. The eruptive fever generally commenced six days after inoculation, and the symptoms of the complaint were milder than they generally are in the casual measles. The fever was less severe, the cough either milder or wholly absent; the inflammation of the eyes was trifling; they watered however as much, and the sneezing was as frequent, as in the casual measles; nor did bad consequences follow any case of inoculated measles. No affection of the breast remained after it.

The chief difference between the casual and inoculated measles seemed to be the absence of any pulmonic affection at all periods of the latter.

It appears that Dr. Home tried another experiment. He put a piece of cotton which had remained in the nose of a patient under the measles, into that of a healthy child, making him breathe through the infected cotton ; but the experiment, although repeated, did not succeed in inducing the disease.

Notwithstanding Dr. Home's success, still inoculation for the

measles is seldom or never practised. The few who have been induced to attempt it, have not, I believe, made quite so favourable a report of it; on the contrary, it has been said to produce an aggravated disease.

Of the SCARLET FEVER, or SCARLATINA.

THIS disease takes its name from the colour of the patient's skin, on which there appears in various parts of the body an eruption of broad red spots.

It is divided into three kinds: when unaccompanied with an ulceration of the throat, it is named scarlatina mitis, or simplex; when attended with such an affection, it is called scarlatina anginosa; and when accompanied by symptoms of malignancy and putrescency, the term scarlatina maligna is applied to it. The two latter are, however, very frequently blended together.

It has been disputed, whether the scarlet fever and malignant sore throat ought to be esteemed different diseases, or only varieties of the same disease.

In my opinion they are the same in specie, which is confirmed by our finding that they are both epidemical at the same time; even in the same family, where a number of children have been ill either together, or immediately after one another, some have had the distinguished symptoms of scarlet fever, and others of the malignant sore throat. Indeed it is now pretty generally admitted, that the scarlatina in all its forms, as well as the cynanche maligna, is produced by the same specific contagion.*

Some have asserted, that scarlatina never affects the same person a second time; more extensive observation has confuted this opinion.

Scarlatina attacks persons of all ages, but children and young people are most subject to it, and it appears at all seasons of the year; but is more frequently met with towards the end of autumn, or beginning of winter, than at other periods, at which time it often becomes a very prevalent epidemic.

Sudden changes from heat to cold, rainy weather, and indigestion, may predispose the body to be acted upon more readily by the infection.

As an epidemic, scarlatina does not always assume precisely the same appearance. This diversity depends, probably, in part, upon the varying nature and constitution of scarlatina itself, independently of all extrinsic circumstances; in part upon certain contingencies, which are common to all the inhabitants of a whole district of country; such as the season of the year, the temperature of the air, the mildness or inclemency of the weather, together with other unknown qualities of the atmosphere; and partly upon circumstances which apply to individuals subjected to the disease, their general habit of body and constitution, their particular state of health at the time of the at-

* See Dr. Willan on Cutaneous Diseases, order iii.

tack, and their situation with respect to lodging, ventilation, and cleanliness.

Beyond all doubt, scarlatina is of a very contagious nature. Simple contact, inoculation, and inhalation, are the different ways by which the infection not only of scarlet fever, but of other contagious disorders, may be introduced into the human body. It is the opinion, however, of Dr. Blackburne,* that the chief and only avenues to infection, in common, are the mouth and nostrils; and consequently that to guard against its communication through these channels, is the principal, or only, necessary precaution. He thinks that the introduction of infectious particles into the human body by simple contact is impossible; and to support this, he brings forward the testimony of the late philanthropic Mr. Howard, who made no scruple of going into the open air to the windward of a person ill of the plague, and feeling his pulse; as likewise that of Dr. Russell, who personally attended the sick in the plague, and felt the pulses of a great number. That infection by the simple contact of poisonous matter on the skin is less ready to excite disease than when applied, in the subtile state of vapour, to the more irritable surface of the nostrils and bronchiæ, is indisputable; but that it proves universally innocuous under every state and condition of the body, may with much reason be doubted.

The disorder to which scarlatina bears the greatest resemblance is the measles; but from this it may be distinguished by attending to the following characteristic marks, in addition to those noticed under the head of Morbilli.

The efflorescence in scarlatina generally appears on the second day of fever; in the measles, it is seldom very evident until the fourth. It is much more full and spreading in the former disease than in the latter, and consists of innumerable points and specks under the cuticle, intermixed with minute papulæ, in some cases forming continuous, irregular patches; in others coalescing into an uniform flush over a considerable extent of surface. In the measles, the rash is composed of circular dots partly distinct, partly set in small clusters or patches, and a little elevated so as to give the sensation of roughness when a finger is passed over them. These patches are seldom confluent, but form a number of crescents, with large intervening portions of cuticle; which retain their usual appearance. The colour of the rash is also different in the two diseases, being a vivid red in the scarlatina like that of a boiled lobster's shell; but in the measles, a dark red, with nearly the hue of a raspberry.

During their febrile stage, the measles are distinguished by an obstinate harsh cough, forcing up, in repeated paroxysms, a tough acrimonious phlegm; by an inflammation of the eyes and eyelids, with great sensibility to light; by an increased discharge from the lachrymal gland, sneezing, &c. Scarlatina is frequently attended with a cough, as also with a redness of the eyes; but on minute observation, it will generally be found that the cough in scarlatina is short and irritating,

* See his Observations on the Prevention and Cure of Scarlet Fever.

without expectoration; that the redness of the eyes is not attended with intolerance of light; that the ciliary glands are not affected; and that, although the eyes appear shining and watery, they never overflow. In scarlatina there is usually a peculiar sensation of anxiety, depression, and faintness in all cases which are attended with fever; whereas in the measles, symptoms of general inflammation are to be met with, except where the disease appears under a malignant form.

Scarlatina mitis, like all other fevers, begins with languor, lassitude, confusion of ideas, chills, and shiverings, alternated by fits of heat. The thirst after a little time becomes considerable, the skin dry, and the patient is often incommoded with anxiety, nausea, and vomiting.

The alvine evacuations are most commonly of the usual quantity, the urine is high coloured and turbid; and the pulse is weak and varying from 100 to 120 strokes in a minute. In a few cases, some slight affection of the fauces is perceived.

About the second or third day the scarlet efflorescence appears on the skin, which seldom produces, however, any remission of the fever. On the departure of the efflorescence, which usually continues out only for three or four days, a gentle sweat comes on, the fever subsides, the cuticle or scarf-skin falls off in small scales, and the patient gradually regains his former strength and health. Such is the disease in its mildest aspect.

In scarlatina anginosa the patient is seized not only with a coldness and shivering, but likewise with great languor, debility, and sickness, succeeded by heat, nausea, vomiting of bilious matter, soreness of the throat, inflammation and ulceration in the tonsils, uvula, and velum pendulum palati, a frequent and laborious breathing, and a quick, small and depressed pulse. When the efflorescence appears, it brings no relief; on the contrary, the symptoms are much aggravated, and fresh ones arise.

In the progress of the disease, one universal redness, unattended however by any pustular eruption, pervades the face, body, and limbs, which parts appear somewhat swollen. The eyes and nostrils partake likewise more or less of the redness; and in proportion as the former have an inflamed appearance, so does the tendency to delirium prevail. There is moreover an acrid discharge from the nostrils, which excoriates whatever part it falls upon.

On the first attack of scarlatina anginosa, the tonsils and uvula are much inflamed, but the inflammation is soon succeeded by dark-coloured sloughs from three to five lines in diameter, or under the surrounding surface, and which conceal beneath them spreading gangrenous ulcers. These occasion the breath to be highly fetid. The patient is often cut off in a few days.

Even if he recovers, it will be by slow degrees, and probably anasarcous swellings will ensue. In some instances, swellings of the submaxillary, parotid, or other small glands arise, and prove troublesome and tedious in suppurating.

The malignant form of the disease is characterized by the following appearances: its symptoms on the first day are nearly the same as in

the scarlatina anginosa; but some of the following peculiarities are afterwards observable. The pulse is small, indistinct, and irregular; and the tongue, teeth, and lips, are covered with a brown or black incrustation. There is a dull redness of the eyes, with a dark red flushing of the cheeks, deafness, delirium, or coma. The breath is extremely fetid; the respiration rattling and laborious, occasioned partly by a viscid phlegm clogging the fauces; the deglutition is constricted and painful; and there is a fulness and livid colour of the neck, with a retraction of the head. Ulcerations are to be observed on the tonsils and adjoining parts, covered with dark sloughs, and surrounded by a livid base; and the tongue is often so tender as to be excoriated by the slightest touch. An acrid discharge flows from the nostrils, causing soreness, or chops, nay even blisters, about the nose and lips; the fluid discharged being at first thin, but afterwards thick and yellowish. The rash is usually faint, excepting in a few irregular patches; and all of it presently changes to a dark, or livid red colour. It appears late, is very uncertain in its duration, and often intermixed with petechiæ. In some instances the rash disappears suddenly a few hours after it is formed, and comes out again at the expiration of two or three days. In an advanced stage of the disease, where petechiæ and other symptoms characteristic of putrescency are present, hemorrhages frequently break forth from the mouth and nose.

When scarlatina is to terminate in health, the fiery redness abates gradually, and is succeeded by a brown colour; and the skin becoming rough, peels off in small scales; the tumefaction subsides, and health is gradually restored. On the contrary, when it is to terminate fatally, the febrile symptoms run very high from the first of its attack, the skin is intensely hot and dry, the pulse is very frequent but small, great thirst prevails, the breath is very fetid, the efflorescence makes its appearance on the second day, or sooner, and about the third or fourth is probably interspersed with large livid spots; and a high degree of delirium ensuing, or hemorrhages breaking out, the patient is cut off about the sixth or eighth day. In some cases a severe purging arises, which seldom fails to prove fatal. Some again, where the symptoms do not run so high, instead of recovering, as is usual, about the time the skin begins to regain its natural colour, become anasarcous, or fall into an atrophy, and are carried off in the course of a few weeks.

Scarlatina in its mild state is not usually attended with danger; but when it partakes much of the nature of cynanche maligna, or discovers a putrid tendency, it often proves fatal.

When scarlet fever is unattended by any inflammation or ulceration in the throat, little more will be requisite than to avoid the extremes of heat and cold; to keep the apartment clean and open; to enforce a light diet without animal food; to direct cooling acidulated liquors for common drink, and to administer gentle medicines suitable to the symptoms that present themselves. Bleeding from the system will never be necessary in scarlatina mitis, even although a slight inflammatory diathesis may seem to prevail on its attack. In both

scarlatina anginosa and scarlatina maligna, it should cautiously be avoided, as faintness and great depression of strength, together with the pulse becoming more weak and irregular, would be the certain and immediate consequences. The physicians on the continent have indeed recommended bleeding from the arm, or, when the head is much affected, from the jugular veins; and it appears that Morton adopted the same practice in most of the cases he attended, even in London; but I think there will be found very few among our modern physicians, who would advise it. In the few cases where I have known it resorted to, it proved either highly prejudicial, or quickly fatal.

In those cases of scarlatina where the tonsils are so much inflamed and swelled as to impede deglutition and to interfere considerably with respiration, it will be much safer to apply a few leeches under each ear, and draw blood in this way from the neighbourhood of the parts immediately affected, than from the system by venesection.

On the first coming on of both scarlatina mitis and scarlatina anginosa, it would seem proper to administer an emetic of ipecacuanha. In the last, more particularly, I am fully convinced, it ought never to be omitted; and probably a repetition of it might be the means of preventing any disposition to diarrhœa, which is so apt to arise, from a considerable quantity of acrid matter passing from the fauces into the stomach, and from thence to the intestines.

After vomiting, it will be proper to dislodge all feculent matter from the bowels by means of some gentle aperient;* and during the remainder of the disease, if costiveness arises, it must be obviated by laxative clysters administered from time to time, as the occasion may require. These, as inducing no debility, will be far preferable to purgatives, when the disease has made some progress. Purgatives ought, indeed, carefully to be avoided, except on the first onset of scarlatina; and even then, whatever we employ, should be of the mildest nature.

This precaution, with respect to administering purgatives in scarlet fever, but more particularly in that species of it which has been denominated scarlatina anginosa, although sanctioned by the opinion of most of our eminent physicians, and ratified by my own experience, by no means accords with the directions of a modern writer;† for he tells us, that in treating scarlatina, he has confided much in the use of purgative medicines, and that no variety of the disease has prevented him from pursuing out this practice to the extent he judged necessary. He indeed somewhat qualifies this mode of treatment, by afterwards acknowledging, that he wishes to limit their effects to the express purpose of unloading the bowels, and securing the complete expulsion of their contents, without inducing, what he calls, full purging.

To determine gently to the surface of the body, it may be advisable

† See Observations on the Utility of Purgative Medicines, by Dr. Hamilton.

* ℞. Calomelanos gr. iij—v.
Pulv. Rhabarb. gr. vj.—xij. M.
ft. Pulvis aperiens.

to give the saline medicine from time to time with small doses of some antimonial.‡

Throughout the whole course of the disease it will be proper to make frequent use of some detergent gargle, as recommended under the heads of Inflammatory Sore Throat, and Cynanche Maligna, which in young children may be thrown into the fauces with a syringe.

A little of the linimentum ammoniæ fortius may at the same time be rubbed twice or thrice a day externally, covering the parts afterwards with flannel. Where the throat is much affected, a mustard poultice may be applied, and kept on, as long as it can be borne, without producing too great a degree of irritation.

Blisters have been employed by some practitioners in those cases where the head is much affected, or a high degree of delirium has arisen; but they have too frequently been observed to prove detrimental, by rather increasing the affection, than alleviating it. Immersing the feet and legs in warm water, might probably be attended with a good effect. In scarlatina, where the eyes look red and fiery, and a high degree of delirium prevails, the application of a leech to each temple might be likely to afford relief.

To obviate inquietude and restlessness, opiates are sometimes resorted to; but where the head is much affected, or there is delirium, they would prove injurious. Vitriolic æther, and the spiritus ætheris nitrosi, would be more suitable remedies on such occasions.

We are informed by Dr. Mosman,* that during the hot stage of this fever he has seen the most happy effects derived from sponging the body over with cold vinegar, as advised in typhus gravior, and by allowing a free current of air through the patient's chamber. He very properly cautions us, however, against such a practice, when the least chilliness prevails, or where there is any tendency to perspiration. In such cases warm vinegar and water may be substituted.

Dr. Currie reports, that he found the affusion of cold water in several instances, to extinguish incipient scarlatina, so as to prevent either efflorescence, or any affection of the throat, from taking place Such a proceeding should, however, be adopted only on the first onset of the disease.

The experience which I have had, not only of the perfect safety, but likewise of the high utility of sponging the body generally over with cold water in the incipient stage of scarlatina, where there is great heat and dryness of the skin, induces me to look on the remedy as a mean of decided relief, and to recommend the practice to be more generally adopted, under such circumstances, than what it is.

* See Dr. Duncan's Annals of Medicine for 1799, article xii.

‡ ℞. Haust. Salin.
Mistur. Camphorat. ää ℥vj.
Antimon. Tartarisat. gr. i-6.
Syrup. Cort. Aurant. ℥j. M.
ft. Haustus 4tis horis sumendus.

Some communications from Dr. Reid,† Physician of the Finsbury Dispensary, seem to bear ample testimony of the unequivocal efficacy and success which attended the use of cold and tepid ablution in thirteen cases of scarlatina. It ought to be kept in mind, he mentions, that in an early stage of the disease, when the strength is not much reduced, when the skin is hot and dry, and where the febrile anxiety is considerable, cold washing is decidedly indicated. But when extreme debility has come on, after the fever has continued for several days; when the pulse is small and irregular, and the skin more relaxed, then the re-action produced by cold washing might prove too violent, and of course, in such cases, tepid sponging is preferable.

In those cases of scarlatina which shew a disposition to malignancy or putrescency, it will be advisable to give the Peruvian bark in substance, decoction, or infusion (as shall be found to sit easiest on the patient's stomach,) along with the mineral acids, wine, and other antiseptics, from the first commencement of the disorder. (See Typhus Gravior.) The capsicum remedy noticed under the head of Cynanche Maligna may likewise be tried.

As an antiseptic, carbonic acid gas has sometimes been used in this species of the disease with advantage. The best way of giving it, is by administering the neutralized medicine in such a manner as that the evolution of the gas may wholly take place in the stomach, which is to be done by the patient's taking the kali and lemon-juice in separate draughts immediately after each other.

The oxygenated muriatic acid is a remedy which has been much employed of late in scarlatina anginosa, and in many instances with a very beneficial effect, even at an advanced stage of the disease. The proper quantity for persons from fourteen to twenty years of age will be about one drachm of it, in the course of twelve hours, divided into small doses and given at proper intervals. For younger patients, a less quantity will be sufficient. As a vehicle to administer the oxygenant remedy in, we may use common water or a weak infusion of columbo; and to prevent the disoxygenating influence of the light, the medicine should be placed in a dark situation, wrapped in paper. In administering it to the patient, is will be necessary to caution the nurse or other attendant not to employ a spoon, lest a poisonous fluid be thereby conveyed into the stomach, by the oxygen rapidly oxydating the metal of which it is composed.

It may not be improper to mention, that camphor is a medicine much employed in scarlatina, and often with a seeming good effect; but more particularly in those cases where the pulse is very low, or the efflorescence disappears suddenly. In these instances volatiles, the aromatic confection, warm bathing, and wine, will likewise be advisable.

A solution of ammonia præparata or carbonate of ammonia, in the proportion of two drachms to five ounces of water, of which two teaspoonfuls are to be taken every two, three, or four hours, according to

† See Medical and Phyfical Journal, vol. xi. p. 27.

the urgency of the symptoms, is another remedy which has been found highly beneficial in this disease.*

My usual plan of proceedings in both scarlatina anginosa and scarlatina maligna is to give a decoction of the bark, with an equal quantity of wine and a few drops of muriatic acid, and in two or three hours afterwards, the draught† of camphor and ammonia, and so on alternately; which mode of proceeding I have found very successful.

If a purging arises in scarlatina anginosa, it ought to be suppressed as soon as possible, by astringents joined with aromatics, opium, and wine. See Diarrhœa.

The œdematous disposition which ensues after some cases of scarlatina anginosa is to be removed by diuretics, joined with tonics and a generous diet, as advised under the head of Anasarca, giving at the same time some gentle laxative occasionally.

In all cases of scarlatina, when the fever has subsided, the cinchona, stomachic bitters, chalybeates, the mineral acids, wine, a nourishing diet, pure air, and gentle exercise, will greatly accelerate the recovery of the patient.

Scarlatina being of a very contagious nature, and never failing to excite the greatest consternation and anxiety when it breaks out in schools and families, it seems right to notice the means which have been recommended,‡ under such circumstances, for checking its progress, and attempting its total extinction.

All masters and mistresses of boarding-schools ought for their own sakes, as well as for the interest of the children committed to their care, to be provided with one or more separate apartments, in proportion to the size of the establishment, for the reception of invalids. These should be so contrived that the communication between the rooms appropriated for the sick and the rest of the house may be speedily and completely cut off at any time. If the establishment be too small to admit of such appendages under the same roof, a proper lodging should be reserved in the neighbourhood, to be always in readiness, whenever the occasion might require to resort to it.

As soon as the fever manifests itself in one subject, the person so affected should be separated without delay from all the rest. The next essential step to be taken is to subdue unnecessary alarm and consternation; in the performance of which duty the parent or guardian must cooperate fully with the instructor. Where the scholars are numerous, and the extent and disposition of the premises admit of it, the best plan

* See Dr. Peart's Treatise on the Malignant Scarlet Fever and Sore Throat.
‡ See Dr. Blackburne's Observations on Scarlet Fever.

† ℞. Camphoræ gr. iv. Solve in
Spirit. Vin. Rectif. ʒfs. et adde
Aq. Puræ
— Cinnam. āā ʒvj.
Ammoniæ Præparat. gr. xv.
Syrup. Cort. Aurant. ʒj. M.
ft. Hauſtus 4ta quaque hora capiendus.

is not to disperse the school; for, by dismissing the children, those in whom the infection is latent, and to be afterwards produced, thereby convey it to their respective families, and so promote the further propagation of the disease, to the great injury of the junior branches in particular, who are more susceptible of the contagion than adults. Having ascertained and cut off the source of infection; having separated the originally tainted, as soon as they begin to sicken, and while they yet remain incapable of imparting disease; having disposed of them in proper apartments, and strictly enforced the rules of prevention; the evil may be crushed in its infancy. The extent and magnitude of the mischief will thus be accurately measured and totally obviated.

But if the accommodations of the establishment be too limited for the complete execution of this scheme, or parents be unwilling to commit their offspring to any other than their own inspection in the time of illness, it is a sacred duty imposed on them, not to admit even a suspected child, much less a diseased one, into family intercourse with themselves, their other children, or their servants. A separate apartment, where circumstances allow of such a convenience, ought to be in readiness, or in a state to be made ready, for accidental sickness. Here a strict quarantine should be performed, whether the subject be suspected or convalescent, the period of which may be regulated, partly by what is already known on the subject, and finally determined by future observation, and the result of aggregated facts. If the child be really infected, immediate separation, with a suitable regimen, should be adopted.

To annihilate the powers of contagion, we may employ fumigations with manganese, salt, and sulphuric acid, as advised under the head of Dysentery; or we may have recourse to those of the muriatic or nitrous acid, as noticed under that of Typhus Gravior.

In regard to prevention, it is obvious that an improvement of the diet in such as live low, moderate exercise in the open air, cold bathing, and, in short, every mode of strengthening the constitution, with great attention to cleanliness and ventilation, must have a tendency to ward off the disease. Those who are in attendance ought as much as possible to avoid inhaling the breath of the sick, as it is clear that scarlatina, as well as some other diseases, may be so received. By using a gargle of capsicum frequently, as noticed under the head of Cynanche Maligna, they probably may be enabled to resist contagion the better.

Of the PLAGUE, or PESTIS.

THE plague is a fever of a putrid and very contagious nature, in the progress of which, extreme debility, buboes, carbuncles, petechiæ, hemorrhages, colliquative diarrhœa, and such other symptoms arise.

By some writers the disease has been divided into three species: that attended with buboes; that attended with carbuncles; and that accompanied with petechiæ. This division appears wholly superfluous. Dr. Russell, in his Treatise on the Plague, makes mention of many varieties;

but when these have arisen, they seem to have depended in a great measure on the temperament and constitution of the air at the period the disease became epidemical, as likewise on the patient's habit of body at the time of his being attacked with it.

Mr. M'Gregor, in his Medical Sketches of the Expedition from India to Egypt, notices, that the plague is subject to considerable varieties in different seasons and circumstances. In the Indian army, he observed, that when the disease first broke out, the cases sent from the crowded hospitals of the 61st and 88th regiments were from the commencement attended with the typhoid or low symptoms. Those which were sent from the Bengal volunteer battalion, and from the other corps, when the army was encamped near the marshy ground at El-Hammed, were all of the intermittent and remittent type. The cases which occurred in the cold rainy months of December and January had much of the inflammatory diathesis; and in the end of the season, at Cairo Ghiza, Boulac, and on crossing the isthmus of Suez, the disease wore the form of a mild continued fever.

The plague is by most writers considered as the consequence of pestilential contagion, which is propagated from one person to another by association, or by coming near infected materials.

Some, however, have doubted whether the disease is really contagious or not. The fact that it is evidently contagious is fully established in Mr. M'Gregor's opinion; but the laws of its transmission are not more accurately known than the specific nature of the contagion. Dead bodies, we are told, did not seem to convey it; the heated animal body, and still more with a febrile moisture on the skin, appeared to transmit it most readily. Among the most obvious causes which contribute to induce the plague besides contagion, may be enumerated the following, viz. corrupt or damaged grain, putrid fish or other animal substances, noxious exhalations arising from stagnant waters or slimy mud, a residence in confined situations where the current of air is obstructed, and the want of due cleanliness.

In some eastern countries, but more particularly Persia and Japan this disease is wholly unknown. In those where it is prevalent, it rages most violently during the summer; its effects are somewhat diminished in autumn; and during the winter it is greatly reduced or totally suppressed. It attacks persons of all ages and both sexes indiscriminately; but women, young people, and infants at the breast, have been observed in general to resist infection more than robust men. Those who were exposed to vicissitudes of heat and cold, such as bakers, cooks, and smiths, were noticed, during the campaign in Egypt, to be more particularly attacked with it.

The plague is said to be most prevalent in that country soon after the inundation of the Nile, or rather its recession; for a quantity of slimy mud being deposited on the banks of the river, and other places it has overflowed, occasions humid mephitic exhalations to arise, and which are supposed to occasion the disease. From Sir Robert Wilson's account of the diseases of Egypt,* there is great reason to suppose that a

* See his Hiſtory of the Expedition to Egypt.

humid state of the atmosphere is favourable to the production of the plague; for the English and Turkish armies, which marched to Cairo, escaped contagion, notwithstanding almost every village was infected; while the troops that remained stationary on the moist shore of Aboukir, were severely affected, and lost many men. A dry atmosphere appeared to him, not only to be a preventive of the plague in some degree, but likewise to act as a remedy; for we are told, that several men, confined with this disorder in the hospital at Jaffa, escaped into the desert, and endeavoured to reach the army; but finding the attempt impracticable, they returned in three days perfectly recovered.

It has been observed, that the plague generally appears as early as the fourth or fifth day after infection; but it has not yet been ascertained how long a person who has laboured under the disease is capable of infecting others; nor how long the contagion may lurk in an unfavourable habit without producing the disease, and may yet be communicated, and the disease excited, in habits more susceptible of the infection. It has generally been supposed, however, that a quarantine of forty days is much longer than is necessary for persons, and probably for goods also. Experience has not yet determined how much of this term may be abated. If I mistake not, the Board of Trade has however, lately, under the sanction of the College of Physicians, somewhat abridged it.

It sometimes happens, that, after the application of the putrid vapour, the patient experiences only a considerable degree of languor and slight head-ach for a few days previous to a perfect attack of the disease; but it more usually comes to pass, that he is very soon seized with great depression of strength, tremor of the limbs, anxiety, palpitations, syncope, stupor, giddiness, violent head-ach and delirium, the pulse becoming at the same time very weak and irregular.

These symptoms are shortly succeeded by uncommon fetor of the breath, nausea, and a vomiting of dark bilious matter; in the further progress of the disease, carbuncles make their appearance; buboes arise in different glands, such as the parotid, maxillary, cervical, axillary, and inguinal; or petechiæ, hemorrhages, and a colliquative diarrhœa ensue, which denote a putrid tendency prevailing to a great degree in the mass of blood.

Such are the characteristic symptoms of this malignant disease, but it seldom happens that they are all to be met with in the same person. Some, in the advanced state of the disease, labour under buboes, others under carbuncles, and others again are covered with petechiæ.

In no disease do patients bear motion worse than in this. The least motion has been known to induce syncope, and even death, particularly in the last stages of the complaint.

The plague is always to be considered as attended with imminent danger and when it prevailed in this country about two hundred years ago, proved fatal to most of those who were attacked with it. It is probable, however, that many of them died from want of care and proper nourishment, the infected being forsaken by their nearest

friends; because in Turkey and other countries, where attention is paid to the sick, a great many recover.

Of the French army that invaded Egypt, little more, however, than one third of all that were attacked with the plague recovered, as appears by the report made by M. Desgenettes,* who was the chief physician to that army.

The duration of the disease is various. In some instances the effect of the pestilential contagion is the immediate extinction of life; and cases have occured wherein the patient has survived but a few hours the first sensation of illness. In other instances again, he has lived till the thirteenth, and even the seventeenth day of the disease.

When the plague is unattended by buboes, it runs its course more rapidly, and is more generally fatal, than when accompanied by such inflammations. The earlier they appear, they milder usually is the disease. When they proceed kindly to suppuration, they always prove critical, and ensure the patient's recovery. It is generally a favourable sign when the bubo does not adhere, but shakes on its base. A gentle diaphoresis, arising spontaneously, has been known in many instances likewise to prove critical. When carbuncles shew a disposition to become gangrenous, the event will be fatal. Furuncles, petechiæ, hemorrhages and a colliquative diarrhœa, denote the same termination.

The worst forms of the disease are always accompanied with the usual symptoms of putridity and malignity; and such rarely terminate favourably. It has been remarked, that if a patient, after an access of delirium, was suddenly restored to his senses, he seldom recovered. Most cases terminate fatally wherein the patient is comatose from the beginning. The typhomania may be regarded as a more fatal form of delirium, than the inflammatory.

Dissections of the plague have discovered the gall-bladder full of black bile, the liver very considerably enlarged and diseased, the heart much increased in size, and the lungs, kidneys, and intestines beset with carbuncles. They have likewise discovered all the other appearances of putrid fever, with the blood black and loose in its texture. In many instances, the glandular system has been found in a very diseased state.

Under the supposition that a person has been exposed to contagion, and in consequence of this becomes much indisposed, the first step to be adopted is to give him an emetic, particularly where nausea or vomiting ensues. If a severe retching should prevail after the operation of the emetic, this may possibly be relieved by administering the saline medicine in the act of effervescence; but if it should not, we may make an addition of a few drops of tinctura opii to each dose.

To obviate costiveness, and draw off any putrescent matter which may be lodged in the bowels, it will be necessary to make use of some gentle laxative; but large evacuations, by the aid of strong pur-

* See his Hiſtoire Medicale de l'Armée de l'Orient.

gatives, would be very improper. In an advanced stage of the disorder, emollient clysters would be most advisable, as being less apt to excite diarrhœa, which when it arises towards the close, generally destroys the patient. So careful are the Eastern nations in avoiding this occurence, that they most commonly make use of suppositories only.

When a diarrhœa does occur, either spontaneously or from an improper use of cathartics, it should be suppressed as quickly as possible by astringents, opiates, and every other means we can employ.

We are informed by Dr. Russell, that many, particularly the Asiatics, make it a rule to let blood in all cases of the plague, if they see the patient at an early period ; and some recommend it as late as the fourth, fifth, sixth, or seventh day; and even some European practitioners have gone nearly as far. To him it appeared that very plentiful bleeding at the first appearance of the disease was of great service.

Dr. Buchan was in the habit of occasionally resorting to bleeding we are told by Mr. M'Gregor, and that during the first season he had met with several cases where the operation proved of the greatest service. The Turks we are informed, employ local instead of general blood-letting, most commonly, and in the latter they draw off only a very small quantity.

The advantages of blood-letting in this disease appear to be of a very dubious nature, and I think we may safely presume that for the most part it is unnecessary, and that in many cases it might prove highly prejudicial. Such likewise is the doctrine laid down by Dr. Cullen.

We are given to understand that Dr. Whyte, one of the physicians to the forces in Egypt, used the lancet very freely, but that every one of his patients died.

It has been observed that a gentle diaphoresis sometimes proves critical, and carries off the disease, but more particularly when it arises spontaneously. To assist nature in throwing off the morbid matter, by the pores, if possible, it will be right to employ diaphoretics, such as the neutral salts, small doses of antimonials, or the pulv. ipecac. compos. as advised under the head of Simple Fever; the effects of which may be increased, by directing the patient to drink plentifully of diluent acidulated liquors ; and where the heat of the body is not very considerable, his strength may be supported under this operation, by means of a little wine. Profuse sweating is, however, by all means to be avoided, as by inducing debility, it would prove injurious.

Dr. Falconer of Bath, in a late Essay on the Plague, seems to insinuate, that no small share of the mortality formerly observed in this disease, may be attributed to the sweating regimen, then commonly employed for its cure. Instead of adopting this plan, he advises the avoidance of a warm bed, and indeed of a bed altogether, if possible, in the daytime ; a circulation of free and cool air, light clothing, cool drinks, and particularly cold water ; and he mentions, that if any

benefit is to be expected from the use of this regimen, it must be tried largely and steadily; not as if cold liquor were an indulgence permitted or allowed, but as a remedy enjoined, on which the principal dependance was to be placed. In addition to these means Dr. Falconer recommends the external use of cold water in the manner pointed out by the late Dr. Currie of Liverpool, and noticed under the head of Typhus Gravior.

Savary, in his Letters on Egypt, mentions an anecdote which is considered by Dr. Falconer as much to his purpose. The captain of a ship, whose sailors had contracted the plague at Constantinople, caught it himself by attending on them: he felt, as he expressed himself, excessive heat, which made his blood boil: the disease seized his head, and he perceived (as he thought) that he had only a few moments to live. The little remaining reason he had, taught him to attempt an experiment: he laid himself down quite naked on the deck: the heavy dews that fell, penetrated, according to his sensations, to his very bones. In a few hours he could breathe better; his agitated blood became calm, and bathing the morning after in the sea, he was perfectly cured.

This case brings to my recollection another of a French soldier, and reported by M. Desgenettes, who being afflicted with the plague, threw himself into the Nile under a high degree of delirium, and on being taken out of the water after a short lapse of time soon recovered from the disease, seemingly in consequence of his immersion.

Camphor is a medicine which has been much recommended in the plague.

For the purpose of allaying irritation and procuring sleep, opiates are advisable, and when used have by no means been found to produce coma. They seem equally proper as in typhus.

If we are so fortunate as to procure a crisis by the remedies which have been advised, the bark should be given in as large doses as the stomach will bear, and be repeated every two hours; but if there is no chance of obtaining this desirable end, then, besides the bark, we should adopt the other means recommended under the head of Malignant Fever, with the view of obviating extreme debility and the disposition to putrescency.

A free use of both vegetable and mineral acids seems advisable in the plague, as well as in typhus gravior. Mr. M'Gregor, in his tract before mentioned, indeed hints that he found the nitric acid, and other irregular remedies, to be serviceable. He likewise employed mercury, as he thought, with some advantage; and when the mouth was speedily made sore by it, recoveries oftener took place in the same manner as in yellow fever, than when the system proved unsusceptible of the mercurial action.

It appears from this gentleman's report, that some patients were kept under the influence of wine and opium for a time, according to the Brunonian theory, but that the practice never proved successful.

Where the patient survives the disease, the treatment of the carbuncles or buboes becomes the province of surgery.

OF THE MODE OF PREVENTION.

It is well known that the pestilential virus which emanates from the human body many adhere for a long time to other substances, and preserve its power of producing and propagating future infection; and that in this manner it may be conveyed from the Eastern countries into any other; the persons first attacked by being exposed to the contagion, then becoming the source of infection to others.

This fact being well established, it has been judged proper by the legislature of this kingdom, and of some others, to oblige ships, persons, and all kinds of merchandise coming from places apt to be infected with the plague, to procure bills of health, or to undergo a certain quarantine, during which period the goods are, or ought to be, properly ventilated. An adherence to these regulations has of late years prevented the importation of the disease; but should it unfortunately ever be introduced, the following steps must be pursued for destroying the infection, and preventing its further propagation:

1st, The infected should be confined in lazarettos, surrounded by strict guards, and no kind of communication be held with them, except by such attendants as may be absolutely necessary.

2dly, The nurses or others employed in attending the sick, must take care to come in actual contact with them as seldom as possible, or place themselves in such a situation as that a stream of air may carry the effluvia towards them.* Medical attendants will act prudently in changing their linen and clothes, and in well washing their whole body, but more particularly their hands, with warm water and vinegar, as soon as they quit the lazaretto.

3dly, All substances capable of being impregnated with the effluvia, or of vitiating the atmosphere, ought to be removed from the apartments of the sick to situations where the healthy cannot suffer by them

* It is a fact well known, that the peſtilential poiſon, unlike other ordinary epidemics, is confined to the vicinity of the affected body, and becomes ſo dilute at the diſtance of a very few paces, as to be incapable of further action. Mons. Samoilowitz, a celebrated Ruſſian phyſician, and author of a very good Memoir on the Plague, inſiſts, that this diſeaſe exiſts neither in the air, nor is communicated by the air, but by contact alone; and Mons. Sonini tells us that it is ſufficient for Europeans ſettled in Turkey to ſhut themſelves up in their houſes in order to be preſerved from the contagion, even when it makes the greateſt ravages in towns which they inhabit, and although they draw from without their proviſions and daily food.

The report made by Mr. M'Gregor likewiſe ſhews how very limited in extent is the action of contagion in the plague. Thirteen of the medical gentlemen of the army of Egypt were directly in the way of contagion, for it was their duty to come into contact with the infected: of theſe, ſeven caught the infection, and four died. To the atmoſphere of the diſeaſe, all the medical men of the army were expoſed, as they ſaw and examined the caſes in the firſt inſtance; but, except from actual contact there never appeared to be any danger of contagion.

and where they may undergo a proper purification by exposing them to the heat of about 120 of Fahrenheit, and then freely ventilating them. The linen and other clothes of the patients should be washed frequently besides.

4thly, The atmosphere surrounding the infected, ought to be kept as pure as possible, so that neither the patient nor his attendants may suffer from the exhalations; with which view, the strictest attention should be paid to cleanliness, a free ventilation, and fumigating with the nitric or muriatic acid, as advised under the head of Malignant Fever.

5thly, To avoid whatever weakens the body, by giving way to intemperance or sensuality, or by making use of a poor diet, great fatigue, or considerable evacuations.

6thly, To keep the mind cheerful, and as free from care, anxiety, fear, and lowness of spirits, as possible.

7thly, As it is supposed that by strengthening the bodies of men we can thereby enable them to resist contagion the better, some advantages may probably be derived from using cold bathing, with wine, bark, and other tonic medicines.

In Dr. Duncan's Annals of Medicine for 1797, is inserted an article relating to the cure and prevention of the plague by frictions of the whole surface of the body with olive-oil, and communicated, as we are given to understand, by George Baldwin, Esq. His Britannic Majesty's agent and consul-general in Egypt.

It is mentioned, that there is no instance of the person rubbing a patient having taken the infection; but, by way of precaution, it is advised to anoint himself all over with oil, and to avoid receiving the breath of the infected person into his mouth and nostrils. The prevention to be used in all circumstances, is that of carefully anointing the body, and living upon light and easily digestible food.

A striking observation made by Mr. Baldwin is, that among upwards of a million of inhabitants carried off by the plague in Upper and Lower Egypt, during the space of four years, he could not learn that a single oilman, or dealer in oil, had suffered.*

Mr. Jackson, in his Reflections on the commerce of the Mediterranean, likewise inform us, that in the kingdom of Tunis, were the plague frequently rages in the most frightful manner, destroying some thousands of the inhabitants, there never was known, an instance of any of the coolies or porters who work in the oil stores, being in the least affected by this disorder, their bodies being always well smeared with the oil, as well as their clothes being imbued with it.

The evidence produced in behalf of the plan communicated by Mr. Baldwin, seems more satisfactory as to the preventive powers of the application, than as to its sanative properties after the disease has once taken place. It seems, however, right to notice, that Dr. Assalini, who was a medical officer in the French army which invaded Egypt,

* It has been said that when the plague raged in London about two hundred years ago, the dealers in pitch, tar, and tobacco, were particularly observed to escape the contagion.

makes a favourable mention of oily frictions in his Observations on the Plague, as being generally followed by copious sweating; and to this, he thinks, their beneficial operations is to be attributed.

Inoculation for the plague has been tried by some physicians, in order to discover if this malady could not be checked or rendered less virulent thereby; and it appears from Sir Robert Wilson's History of the Expedition to Egypt, that Dr. Whyte, resolving to become the patient of his own speculation during the time this disease raged at Rosetta, inoculated himself with matter taken from the buboes of an infected person. The attempt failed twice; the third proved fatal in three days after the symptoms shewed themselves.

It likewise appears that Dr. Desgenettes, in order to lessen the general alarm, and to inspire confidence among the French troops, inoculated himself both in the groin and arm-pit, with a lancet dipped in the pus of a bubo in a convalescent patient. The inoculation, however, failed; and the only consequence was a slight inflammation on the inoculated parts, which continued for more than three weeks.

As the future susceptibility to the disease is by no means, however, destroyed, for the same person may be afflicted with it repeatedly, and even may be attacked twice in the same season with it, as Dr. Desgenettes experienced, (many of the convalescents from the plague who were appointed to take care of the sick, having been, he observes, seized a second time,) this experiment would not be advisable, unless it could be ascertained that the disorder is rendered milder by the inoculation. This is a point not yet, however, established; indeed, the information afforded to us by Monsieur Sonnini* seems to lead to a contrary conclusion; for he mentions that a Russian surgeon, who was a prisoner at Constantinople, with a number of his countrymen, took it into his head to inoculate these unfortunate men with the plague, under the supposition of rendering the contagion less destructive; but by doing so, he killed two hundred of these prisoners; and fortunately for the rest, the inoculator, after having performed the operation on himself, soon died of his own treatment.

Of MILIARY FEVER, or MILIARIS.

THIS fever takes its name from the small pustules or bladders which appear on the skin, resembling in shape and size the seeds of millet, being in general numerous on the breast, back, and other parts where there is most moisture on the skin. It may be distinguished from the other exanthemata by its pathognomic symptoms, the peculiar sour and rank odour of the sweat, attended with dejection of spirits, oppression and sense of constriction about the precordia, anxiety, and frequent sighing.

Many of our modern physicians seem to think that the disease is never a primary one, but arises in consequence of some other; particularly where much sweating has been excited, either by keeping the patient too warm, or by giving heating medicines.

* Travels into Greece and Turkey, p. 497.

All debilitating powers, such as a lax habit of body, weakness however induced, excessive evacuations, the presence of irritating matter in the primæ viæ, the period of child-birth, long-continued menstruation, &c. may be regarded, most probably, as predisposing causes, while the hot regimen is to be looked upon as the principal exciting cause of the eruption. This conclusion seems justifiable, as it is found, that whatever the state of the patient may be, miliary eruption is very generally avoided by exposure to cool air, and administering cold liquors.

It has been observed to affect both sexes, and persons of all ages and constitutions, but that females of a delicate habit are most liable to it, particularly in childbed. It is, however, by no means a contagious disease, and has rarely, if ever, been known to prevail epidemically.

Moist variable weather predisposes most to this eruption, and its occurrences are more usual in the spring and autumn than in the other seasons. Winter is the least favourable to its appearance.

Miliary fever makes its attack with a slight shivering succeeded by heat, restlessness, loss of strength, depression of spirits, anxiety, difficulty of breathing, oppression at the chest, and a low quick pulse. The tongue appears white, the mouth is dry, the body costive, and when the disease is violent, coma or delirium is apt to arise. Great dejection of spirits and anxiety, with fetid sweats, are, however, the most common forerunners of the miliary eruption.

The patient after a short time feels an itching or pricking pain under the skin, soon after which innumerable small pustules, of a red colour, come out. These are usually distinct, but now and then we may perceive them clustered together.

About the second day after the appearance of the eruption, a small vesicle may be observed on the top of each pimple, and in two or three days more they break, and are succeeded by small crusts, which fall off in scales. Sometimes it happens, that when one crop of eruptions had disappeared, another will succeed it.

On the eruption being visible, most of the foregoing symptoms are usually relieved. The sweating is apt, however, to continue, unless proper means are used to check it, and to be attended for many days with a fresh crop of eruptions.

Very violent symptoms, such as coma, delirium, and convulsive fits, now and then attend miliary fever, in which case it is apt to prove fatal.

A numerous eruption indicates more danger than a scanty one. The eruption being steady, is to be considered as more propitious than its frequently disappearing and coming out again; and it is more favourable, when the places covered with the eruption appear swelled and stretched, than where they remain flaccid. The more severe the preceding symptoms, and particularly the greater the debility and depression of spirits, the more unfavourable is the prognostic.

The appearances to be observed on dissection, will depend on the nature of the fever which accompanies the eruption, and which most usually is of the typhoid kind.

As the disease is evidently brought on by the application of too much heat, an early attention ought to be paid to the means of preventing it from appearing in those affections which it is apt to accompany. With this intent, the patient should not to be covered with too many bed-clothes; neither should the chamber be kept hot by means of too much fire, or by being closely shut up: on the contrary, a sufficient ventilation ought to be allowed, so as to keep it of a proper temperature. In doing this, we are, however, to take care not to run into the opposite extreme, and allow too free an admission of cold air.

Sweats which are not followed by an abatement of the febrile symptoms, cannot of course prove critical, and may therefore be safely and advantageously checked, by keeping the patient's apartment cool, by covering him lightly and loosely with bed-clothes, by making him lie with his arms exposed, and by giving him whatever he drinks perfectly cold; but in sweats which are likely to be critical, the practitioner must take care to regulate the admission of air, so as that it shall not prove prejudicial.

By adopting these precautions at an early period, we may often prevent miliary eruptions, which might otherwise have appeared; and after they have made their appearance, we probably may be able to moderate them, by using the same means.

Miliary eruptions sometimes accompany inflammatory affections; in which case it will be necessary to have recourse to gentle aperients or laxative clysters; but bleeding ought seldom or never to be used. They are found to attend more usually on diseases where much debility prevails, or where there is a disposition to putrescency; in which instances the patient's strength must be supported with wine and a nutritive diet, making use at the same time of tonics, the Peruvian bark, and other antiseptics, as advised under the head of Typhus Gravior.

Whatever debilitates, is in most cases of miliary fever pernicious; whatever supports the vigour of the system, beneficial.

Great sickness at the stomach is apt to precede any fresh eruptions that come out in the course of the disease, and to prove very distressing. To allay it, we may order small and frequently repeated doses of the mistura camphorata.

Where delirium or coma comes on, in consequence of a sudden striking in of the eruptions, cordials, ammonia, camphor, and blisters will be proper. When a retrocession of the eruption happens, our principal view should be to bring out and support a sweat by powerful diaphoretics, external warmth, pediluvium, &c. Where any considerable evacuation ensues on a retrocession, we must be careful not to check it. Should convulsions supervene on a retrocession, camphor, musk, and opium, are particularly recommended.

To prevent the disease from arising in pregnant women, costiveness ought carefully to be guarded against; and when in childbed, they should strictly observe a cool regimen, and keep their chamber of a proper temperature, being at the same time lightly covered with clothes.

Of the VESICULAR ERUPTION, or PEMPHIGUS.

THIS disease consists in eruptions dispersed over different parts of the body, internal as well as external, which gradually rise up into vesicles of about the size of a large nut, containing a yellow serous fluid, that is in some instances of an ichorous nature, and which again disappear in the course of three or four days. By some authors it is described as being attended both by fever and contagion; and by others as being accompanied by neither. It is therefore supposed that there are two species of it, the chronic and the acute. The disease is, however, of very rare occurrence. Dr. Willan* describes three varieties of it, viz. pemphigus vulgaris, pemphigus contagiosus, and pemphigus infantilis; but he has never seen any instance of the two first. The last, he says, occurs sometimes in weak emaciated children, who are destroyed by the pain and irritation of the successive vesications and ulcerations.

By the generality of the physicians who have favoured us with their opinions, the principal of whom is Dr. Dickson, † it has not been considered as contagious. This gentleman saw six cases of the complaint, in none of which it was received by contagion, nor communicated to those who attended the sick. Dr. Cullen informs us, that the blisters are filled with a thin ichor which is discharged, not absorbed, as mentioned by Dr. Dickson; but during his whole practice it appears that he met only with a single case of pemphigus.

Some slight degree of lassitude, sickness, and head-ach having prevailed for a day or two, small vesicles of about the size of a pea make their appearance over different parts of the body, and not unfrequently in the mouth, and other parts of the alimentary canal; and these gradually increase till they become as large as a nut or almond. Now and then they are to be met with of the size of a walnut. They are surrounded by an inflamed margin or areola, and distended with a faintly yellow serum. They often are accompanied with difficulty of deglutition, nausea, vomiting, and a sense of soreness in the abdomen. Sometimes they are so numerous as to run into each other. The pulse during this time, is small and frequent, and the patient is sensible of a considerable degree of debility.

If the vesicles are not broken, they fill with a yellowish serum, which is again absorbed into the system in the course of three or four days.

This appears to be the most favourable termination, as they have been known to leave troublesome ulcers behind them when they broke.

Pemphigus resembles the small-pox, in frequently leaving pits in the skin, and in the parts which the vesicle occupied remaining of a dark colour for a considerable time afterwards. In the third volume of Me-

* See his Treatise on Cutaneous Diseases.

† See his Paper on Pemphigus, in the Transactions of the Royal Irish Academy in 1787.

dical Facts and Observations, Dr. Winterbottom takes particular notice of this occurrence.

We are to be influenced in our prognosis by the seat and appearance of the vesicles. When they appear only on external parts, and are not numerous, they demand little attention; when they are numerous, when they attack the alimentary canal, and are attended with a small hard pulse, and great prostration of strength, the danger is considerable. The danger is likewise very great, when the ulcers left by the vesicles shew a tendency to gangrene by becoming livid, which seldom happens, however, unless a fever of the true typhoid kind has accompanied the eruption.

On taking a comprehensive survey of what has been recorded by recent writers on the subject, we must, I think, conclude that pemphigus is an affection merely sporadic, and not of a contagious nature, and that the symptoms accompanying one or other instances of this affection are those which attend febrile diseases, whether inflammatory or putrid. The most important distinctions necessary to be ascertained appear therefore to be,

1st, Whether the fever is of an inflammatory nature, and accompanied with a strong and increased action of the vascular system; or,

2dly, Whether the fever has a tendency to the typhoid type, and is marked by great debility, and other symptoms which denote a tendency of the fluids to putrefaction. It will be obvious that in the first case evacuation and other antiphlogistic remedies will be proper; and that in the second, it will, on the contrary, be necessary to shun all evacuations, and to employ those remedies alone which support the strength, and give tone and vigour to the system.

In most cases the disease seems to be connected with a certain state of debility, and a tendency of the fluids to putrefaction, and therefore the indications of cure are obvious.

Having cleansed the stomach by a gentle emetic, where nausea prevails, and dislodged the contents of the intestines by some mild laxative, such as the saline purgatives, or small doses of calomel; we may then give the Peruvian bark either in infusion, decoction, or powder, along with wine. The mineral acids in a state of proper dilution, if administered early, will likewise be of service in obviating the effects of debility, and any tendency to putrefaction.

On the first accession of the disorder, if the skin is hot and dry, it may be of service to give the saline medicine with small doses of some mild antimonial, in order to excite a gentle diaphoresis; but these should not be continued long.

To diminish the effects of irritation, opiates combined with vitriolic æther will be proper.

Where vesicles arise in the mouth, and break, so as to become ulcers, we should then employ detergent gargles, as advised under the head of Cynanche Maligna.

If there is reason to apprehend that the eruption has extended to the alimentary canal, it will be necessary to order copious draughts of some

mucilaginous decoction, as mentioned under the head of Aphtha Chronica.

When obstinate ulcers are formed on any exterior part of the body in consequence of the vesicles breaking, the assistance of a surgeon will be requisite.

Some practitioners are in the habit of opening the larger vesicles; but the propriety of this step is not yet fully established.

On recovery, the patient's strength is to be recruited by tonics and other auxiliaries, as noticed under the head of Dyspepsia.

Of the NETTLE-RASH, or URTICARIA.

THIS disease takes its name from its being attended by an eruption of the skin, similar to what is produced by the stinging of nettles. Dr. Willan, in his Treatise on Cutaneous Diseases, notices six varieties of it. See Order III.

In some instances a slight degree of fever either precedes or attends the eruption: this is not confined to any particular parts of the body, but is somewhat dispersed, being always accompanied with a considerable degree of heat and itching. In some cases, urticaria is characterized by large wheals or bumps, which on pressure appear of a solid nature, without any cavity or head; nor do they contain any kind of fluid.

The causes of urticaria are by no means obvious, but it has been supposed to arise from suppressed perspiration, or some irritating matter in the stomach. A disease very similar to febrile urticaria is produced in particular constitutions by substances received into the stomach, which prove offensive, such as almonds, mushrooms, crab-fish, muscles, lobsters, herrings, &c. When a person is poisoned by fish of a deleterious nature, it frequently shews itself as a consequence thereof. (See Animal Poisons.) The effect is rapid, and the symptoms are violent for some hours. In consequence of such circumstances, physicians have been induced to conclude, that urticaria, attended with fever, originates generally from indigestion, or from some substance of a noxious quality taken into the stomach.

The nettle-rash readily gives way in general to a cool regimen, and keeping the body open with mild laxatives, such as the crystals of tartar, or any of the neutral salts. When it has arisen from any thing noxious being eaten, an emetic should be administered at the commencement of the attack.*

* According to the nofological arrangement of Dr. Cullen, Aphtha ſhould have followed next as one of the Exanthemata; but being more frequently met with among infants than perſons of a mature age, it has been inſerted among the diſeaſes of the infantile ſtate.

Aphthoides Chronica, or chronic thruſh, not being an idiopathic diſeaſe, but ſymptomatic of ſome other, ſuch as general debility, is placed in the claſs Cachexiæ.

ORDER IV.

OF INVOLUNTARY DISCHARGES OF BLOOD, OR HEMORRHAGIÆ.

UNDER this title are comprehended active hemorrhages only, that is, those attended with some degree of symptomatic fever, and which depend upon an increased impetus of the blood in the vessels from which it flows, chiefly arising from an internal cause.

The general remote causes of hemorrhages of this nature are, external heat, a sanguine and plethoric habit, whatever increases the force of the circulation, as violent exercise, strong exertions, anger, and other active passions, particular postures of the body, ligatures producing local congestion, a determination to certain vessels, rendered habitual from the frequent repetition of hemorrhage, the suppression of accustomed evacuations, external violence, and exposure to cold.

The general treatment of such hemorrhages must consist in putting a stop to the discharge of the blood; in preventing its recurrence, by removing the causes by which they were excited, and by destroying the inflammatory diathesis when any exists. These means remain to be pointed out under each distinct hemorrhage, as in the subsequent pages.

OF THE HEMORRHAGE FROM THE NOSE, OR EPISTAXIS.

IN the nose there is a considerable net-work of blood-vessels expanded on the internal surface of the nostrils, and covered only with a thin tegument; hence upon any determination of a greater quantity of blood than ordinary to the vessels of the head, those of the nose are easily ruptured. In general the blood flows only from one nostril; but in some cases it is discharged from both, then shewing a more considerable disease.

Persons of a sanguine and plethoric habit, and not yet advanced to manhood, are very liable to be attacked with this complaint; females being much less subject to it than males, particularly after menstruation has commenced. Peculiar weakness in the vessels of the part, and the decline of life, may also be considered as predisposing causes. Great heat, violent exertion, external violence, particular postures of the body, and every thing that determines the blood to the head, are to be looked upon as its exciting causes.

Epistaxis comes on at times, without any previous warning; but at others, it is preceded by a pain and heaviness in the head, flushing in the face, heat and itching in the nostrils, a throbbing of the temporal arteries, and a quickness of the pulse. In some instances, a coldness of the feet, and shivering over the whole body, together with a costive belly, are observed to precede an attack of this hemorrhage.

The complaint is to be considered as of little consequence when oc-

curring in young persons, being never attended with any danger; but when it arises in those who are more advanced in life, flows profusely, and returns frequently, it indicates too great a fulness of the vessels in the head, and not unfrequently, precedes apoplexy, palsy, &c. and therefore in such cases is to be regarded as a dangerous disease.

When this hemorrhage arises in any putrid disorder, it is to be considered as a fatal symptom.

As a bleeding from the nose proves salutary in some disorders, such as vertigo and head-ach, and is critical in others, such as phrensy, apoplexy, and inflammatory fever, where there is a determination of too great a quantity of blood to the head; we ought properly to consider at the time that it happens, whether it really is a disease, or intended by nature to remove some other.

When it arises in the course of some inflammatory disorder, or in any other where we have reason to suspect too great a determination of blood to the head, we may suppose that it will prove critical, and therefore we should suffer it to go on, at least as long as the patient is not weakened by it.

Neither should it be suddenly stopped, when it happens to persons in good health, who are of a full and plethoric habit. In short, where a bleeding at the nose relieves any disagreeable symptom, and does not proceed so far as to induce debility, it ought not to be hastily checked.

When it arises in elderly people, or returns too frequently, or continues till the patient becomes faint, it ought to be put a stop to as quickly as possible: to effect this, the person is to be exposed freely to cool air, and to be placed nearly in an erect position, with his head somewhat inclined backwards; to drink freely of cold liquors, and to make use of an antiphlogistic regimen. Besides these means, he may immerse his head in water impregnated with ammonia muriata, and snuff vinegar and water frequently up the nose, or he may throw some astringent wash* repeatedly up the nostril from which the hemorrhage proceeds, by means of a syringe.

If these means fail, a dossil dipped in strong spirits of wine, or in a solution of blue vitriol, or ferrum vitriolatum dissolved in brandy; or a tent wetted in the white of an egg well beat up, and afterwards rolled in equal parts of alum and vitriolated zinc, may be applied up the nostril. To assist the effect of the application, the genitals may at the same time be immersed in cold water, and linen cloths wetted in a solution of nitre be kept to the forehead and temples.

Dr. Darwin mentions in his Zoonomia the case of a lady who had a continued hemorrhage from her nose for several days; the ruptured

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* ℞. Zinc. Vitriolat. ʒj.
Cerussæ Acetat. gr. x.
Aquæ Distillat. ℥x. M.
fi. Injectio.

Vel

℞. Tinct. Ferri Muriat ʒj.
Aq. Distillat ℥vj. M.

℞. Alumin. in pulv. trit. ʒij.
Aq. Rosæ ℥vj.
Aceti Distillat. ʒj. M.

vessel was not to be reached by plugs up the nostrils, and the sensibility of her fauces was such, that nothing could be borne behind the uvula. After venesection, and other common applications, she was directed to immerse her whole head in a pail of water, which was made colder by the addition of several handfuls of salt; in consequence of which, the hemorrhage immediately ceased and returned no more; but her pulse continuing hard, she was necessitated to lose blood from the arm on the succeeding day.

In epistaxis the application of pressure to the mouth of the bleeding vessel is often attended with a good effect, when other means prove unsuccessful; to effect which, a piece of hog's gut that has been previously dried, and moistened again, may be used. One end of it being firmly tied with a bit of small packthread, is, by means of a probe, to be pushed along the course of the nostril from which the blood is discharged to the upper part. The gut is then to be filled with cold vinegar and water by means of a syringe inserted at the end hanging out of the nostril, and as much being injected as the gut will admit, the whole is to be pressed up as far as possible, and to be then secured in this situation by a proper bandage.

While we are pursuing these steps, we are at the same time to open the body, if necessary, with cooling purgatives, in order to make some derivation from the vessels of the head, and the patient is carefully to avoid all those circumstances which might either determine the blood to the head, or prevent its free return from it.

Refrigerants, such as the saline medicine with nitre, may be advised every hour or so, the patient drinking cold acidulated liquors, and exposing himself freely to cool air.

Astringents, such as vitriolated zinc, alum and acetated ceruse, with opium, are sometimes given internally; but their effect seems doubtful, as they seldom have time to act. When the complaint is of long duration, they may be used as below.* Alum, catechu, and gum kino, are astringents more applicable for hemorrhages from the lungs, stomach, and intestines, than for epistaxis.

In this hemorrhage as well as in all other active ones, the tincture of digitalis, given in doses of thirty drops from a two-ounce phial (the size will make some difference in the drops) every six hours for four or five doses, may prove an efficacious remedy, particularly in full robust habits, or where there is a quickened circulation.

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* ℞. Infus. Roſæ Acid. ℥vj.
Nitri ʒj. M.
ft. Miſtura cujus sumat Cochl. larg. iij. tertia quaq. hora.
Vel
℞. Acid. Sulph. Dilut. gutt. xx.
Aq. Font. ℥jſs.
Syrup. Roſæ ʒij.
Tinct. Opii gutt. xv. M.
ft. Hauſtus ter quaterve die ſumendus.
Vel
℞. Zinc. Vitriolat. gr. 1-4—1-2.
Aluminis gr. x.
Infus. Roſæ ℥jſs.
Syrup. Ejusdem ʒj. M.
ft. Hauſtus ℔tis horis ſumendus.
Vel
℞. Aq. Diſtillat. ℥jſs.
Cerus. Acetat. gr. ſs.—j.
Tinct. Opii gutt. xij.—xx.
Syrup. Roſæ ʒj. M.
ft. Hauſtus ſexta quaque hora capiendus.

After the bleeding has ceased, the patient must be careful not to remove the tents of clotted blood, but should allow them to come away of themselves; and in order to avoid any return of the hemorrhage, he must be kept as still and quiet as possible, taking care not to apply any thing of a stimulating nature to the nose.

It sometimes happens that when the bleeding is stopped outwardly, it nevertheless continues inwardly, and prevails in so high a degree as to threaten suffocation, particularly when the person falls asleep. In such cases the passage may be stopped by introducing a pliable probe up the nostril, through the eye of which some strong threads have been passed, and so bringing it out at the mouth, then fastening pieces of sponge to their extremities, afterwards drawing them back, and tying them on the outside with a sufficient degree of tightness.

Where epistaxis arises in adults of a full plethoric habit, bleeding from the system may be performed with advantage, and with a frequent use of cooling purgatives, and an antiphlogistic regimen, may probably prevent any return of the complaint. When occasioned by too great a determination of blood to the head, topical bleeding by means of leeches to the temples will be advisable.

When it is occasioned by the suppression of some accustomed evacuation, such as the menstrual or hemorrhoidal flux, this is to be restored if possible; but if we do not succeed, some other discharge, by means either of an issue or seton, must be substituted.

Of a SPITTING of BLOOD, or HÆMOPTYSIS.

In hæmoptysis there is a discharge of blood from the mouth, brought up with more or less of coughing, and preceded usually by a saltish taste in the saliva, a sense of weight about the precordia, and a pain in some part of the thorax.

It is readily to be distinguished from hæmatemesis, as in this last the blood is usually thrown out in considerable quantities, and is moreover of a darker colour, more grumous, and mixed with the other contents of the stomach; whereas the blood proceeding from the lungs is usually in small quantity, is of a florid colour, and mixed with a little frothy mucus only.

A spitting of blood arises most usually between the ages of sixteen and twenty-five, and may be occasioned by any violent exertion, either in running, jumping, wrestling, singing, speaking loud, or blowing wind-instruments; as likewise by wounds, plethora, weak vessels, hectic fever, coughs, irregular living, excessive drinking, or the suppression of some accustomed discharge, such as the menstrual or hemorrhoidal. It may likewise be occasioned by breathing air which is too much rarefied to be able properly to expand the lungs.

Persons in whom there is a faulty proportion either in the vessels of the lungs, or in the capacity of the chest, being distinguished by a narrow thorax and prominent shoulders, or who are of a delicate

make and sanguine temperament, seem much predisposed to this hemorrhage; but in these, the complaint is often brought on by the concurrence of the various occasional and exciting causes before mentioned.

A spitting of blood is not however always to be considered as a primary disease. It is often only a symptom, and in some disorders, such as pleurisies, peripneumonies, and many fevers, often arises, and is the presage of a favourable termination.

Sometimes it is preceded (as has already been observed) by a sense of weight and oppression at the chest, a dry tickling cough, and some slight difficulty of breathing. Sometimes it is ushered in with shiverings, coldness of the extremities, pains in the back and loins, flatulency, costiveness, and lassitude. The blood which is spit up is sometimes thin, and of a florid red colour; and at other times it is thick, and of a dark or blackish cast; nothing, however, can be inferred from this circumstance, but that the blood has lain a longer or shorter time in the chest before it was discharged.

An hæmoptoe is not attended with danger, where no symptoms of phthisis pulmonalis have preceded or accompanied the hemorrhage, or where it leaves behind no cough, dyspnœa, or other affection of the lungs; nor is it dangerous in a strong healthy person of a sound constitution, unless the hemorrhage is very great; but when it attacks persons of a weak lax fibre, and delicate habit, it may be difficult to remove it.

It seldom takes place to such a degree as to prove fatal at once; but when it does, the effusion is from some large vessel. The danger, therefore, will be in proportion as the discharge of blood comes from a large vessel, or a small one.

When the disease proves fatal in consequence of the rupture of some large vessel, there is found on dissection a considerable quantity of clotted blood between the lungs and pleura, and there is usually more or less of an inflammatory appearance at the ruptured part. Where the disease terminates in pulmonary consumption, the same morbid appearances are to be met with as described under that particular head.

In an hæmoptoe, the effusion is to be moderated by a strict observance of the antiphlogistic plan; by carefully avoiding heat, and every kind of bodily exertion; by employing occasionally cooling purgatives, such as manna, tamarinds, phosphorated soda, vitriolated tartar, &c. and by making use of a light diet with refrigerants.* Dr. Darwin is of opinion, that one immersion in cold water, or a sudden sprinkling all

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* ℞ Infus. Rosæ ℥ij.
Kali Nitrat. gr. xv.
Tinct. Opii gutt. xx. M.
ft. Haustus 3tia vel 4ta quaque hora sumendus.

Vel

℞. Crystal. Tartar. ℥iij.
Kal. Nitrat. ℥ij. M.
ft. Pulv. ℥ss. pro dos.

Vel

℞. Acid. Sulph. Dilut. gutt. xxx.
Aq. Fontan. ℥jss.
Tinct. Opii gutt. xx.
Syrup. Rosæ ℥j. M.
ft. Haustus.

over with it, might probably stop a pulmonary hemorrhage. Indeed the application of cold to the genitals, or immersing the feet, or even the lower part of the body, ought in no case of hæmoptysis to be neglected.

If the patient is hot and feverish, of a plethoric habit, and has a hard pulse, bleeding from the arm may be used with advantage, provided the pulse has not been lowered by the effusion; and whatever he drinks may be acidulated with a little lemon-juice; but on the contrary, where there are marks of debility and laxity, and the blood is of a dark colour, depletion will be improper.

In those cases where the hemorrhage is considerable, and has not proceeded from plethora, besides adopting the means just recommended, with the exception of blood-letting, we ought to give astringents,* in order to stop it as quickly as possible; and if we find mild ones to fail, we must then employ others of a more powerful nature,† taking care to exhibit some laxative, such as the oleum ricini, now and then, to prevent their having any deleterious effect.

The acetate of lead has been used freely, and with great advantage, in hæmoptysis. One grain every four or six hours may be employed with perfect safety. In cases attended with imminent danger we may venture on two grains. It may be given in an infusion of roses, with a few drops of tinctura opii.

The remarkable operation of digitalis in retarding the pulse has suggested its use in cases of active hemorrhage, and particularly in hæmoptoe, in which disease it has been used by many practitioners, and

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* ℞. Gum. Kino gr. viij.
Aluminis gr. x.
Opii gr. ſs.
Conſerv. Roſæ q. s. M.
ft. Bolus 4ta quaq. hora ſumendus.
Vel
℞. Aluminis gr. viij.
Terr. Catechu gr. x.
Conſerv. Roſæ q. s. M.
ft. Bolus 3tia quaq. hora ſumend. ſuperbib. Cochl. iij. magna.
Infus. Roſæ.
Vel
℞. Tinct. Kino.
——— Catechu āā ℥ſs.
——— Opii ℥ij. M.
Capiat guttas xxx.—xl. pro dos.

† ℞. Vitriol. Virid.
Opii āā gr. ſs.
Conſerv. Roſæ gr. xij. M.
ft. Bolus ter die ſumendus.
Vel
℞. Gum. Kino gr. x.
Alumin. Uſt. gr. iij.
Opii gr. ſs.
Conſerv. Rosæ q. s. M.
ft. Bolus.
Vel
℞. Vitriol. Cupri gr. v.
Aq. Roſæ ℥viij.
Tinct. Opii gutt. lx. M.
ft. Miſtura cujus ſumat æger Cochl. larg. j. 4ta quaq. hora.
Vel
℞. Tinct. Saturnin. gutt. xv. pro dos.
Vel
℞. Infus. Roſæ ℥jſs.
Aluminis gr. x.
Zinci Vitriolat. gr. ½.
Tinct. Opii gutt. x.
Syrup. Roſæ ℥j. M.
ft. Hauſtus 4tis horis capiendus.
Vel
℞. Tinct. Benzoes C.
——— Saturnin. āā ℥ij.
Capiat guttas xxv.—xxx. pro dos.

repeatedly by myself, with a very happy effect. It may be given in small doses, repeated twice or thrice a day, as prescribed here.*

If the hemorrhage resists all the means which have been advised, and there is reason to fear that the patient may sink under the loss of blood, it will be proper to apply a blister to the chest; which remedy has often been attended with much advantage in cases of this nature.

Dr. Rush tells us, that a table spoonful or two of common salt is often successful, when other means will fail.

When much coughing attends on hæmoptoe, it will be necessary to have recourse to opium, exhibited in small and frequently repeated doses, along with the other remedies.

Different preparations of the hyoscyamus have been successfully employed in hæmoptoe, by the German physicians, but more particularly the oil ;† but being in the possession of so active a remedy as the digitalis for suppressing pulmonic hemorrhage, it seems unnecessary to resort to this.

After the effusion is stopped, we are to use every possible means for preventing its return. If the complaint has arisen from predisposition, and where an inflammatory diathesis prevails, it may be necessary to obviate this by small bleedings, repeated according to the urgency of the symptoms ; besides which, we may employ refrigerants and cooling purgatives occasionally, the patient at the same time adhering strictly to an antiphlogistic regimen, and avoiding all vigorous exertions of the body, agitations of the mind, and other occasional causes.

Sailing, travelling in an easy carriage, swinging, and riding gently on horseback, will be the most proper exercises.

Where the disease arises in persons of a lax fibre and delicate habit, it has been customary to exhibit the Peruvian bark and chalybeates. These seem, but more particularly the latter, to be unsafe medicines in all cases of active hemorrhage, and have been experienced frequently to prove prejudicial in hæmoptoe, by increasing the phlogistic diathesis.

† See Extracts from Hufeland's Journal, in vol. iii. p. 576, of the Medical and Physical Journal.

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* ℞. Pulv. Digitalis Purp. gr. j.
Conserv. Rosæ gr. x. M.
ft. Bolus mane, hora meridiana, et vespere sumendus.
Vel
℞. Fol. Digital. Purp. Sicc. ℥j.
Spirit. Vin. Rectif.
Aq. Puræ ää ℥ij. ft. Infus.
Post horas xxiv. Col. et capiat æger guttas xxx. bis terve die in
Aq. Menth. Sativ. ℥j.
Vel
℞. Infus. Rosæ ℥jfs.
Tinct. Digitalis gutt. xx.
——Opii gutt. x. M.
ft. Hauftus 6tis horis capiendus.

Whenever there is a fixed pain in the chest, a blister may be applied over the part with considerable advantage. To prevent a recurrence of hæmoptoe, issues and setons have been employed in some cases, and probably with a good effect.

Of a VOMITING of BLOOD, or HÆMATEMESIS.

A HEMORRHAGE of blood from the stomach is readily to be distinguished from one which proceeds from the lungs, by its being usually preceded by a sense of weight, pain, or anxiety in the region of the stomach; by its being unaccompanied by any cough; by its being discharged in a very considerable quantity; by its being of a dark colour, and somewhat grumous; and by its being mixed with the other contents of the stomach.

The disease may be occasioned by any thing received into the stomach, which stimulates it violently or wounds it; or may proceed from blows, bruises, or any other cause capable of exciting inflammation in this organ, or of determining too great a flow of blood to it; but it arises more usually as a symptom of some other disease (such as a suppression of the menstrual or hemorrhoidal flux, or obstructions in the liver, spleen, and other viscera) than as a primary affection.

Towards the close of scarlatina maligna, typhus gravior, and other disorders of a like nature, where symptoms of putrescency prevail in a high degree, a hemorrhage from the stomach is very apt to arise.

Hæmatemesis is seldom so profuse as to destroy the patient suddenly; and the principal danger seems to arise, either from the great debility which repeated attacks of the complaint induce, or from the lodgment of blood in the intestines, which by becoming putrid might occasion some other disagreeable disorder.

The appearances to be observed on dissection, where it proves fatal, will depend on the disease of which it has been symptomatic.

Where this complaint has arisen in a plethoric habit, and is attended with some febrile symptoms, it may be necessary to take away a small quantity of blood from the arm; but the great debility which the disease produces of itself, will not admit of this operation under any other circumstances, except where it has taken place in consequence of suppressed menstruation; in which case we may take away about six ounces of blood, a day or two previous to the period at which the hemorrhage would have returned.

In moderate attacks of the disorder it may be sufficient to make use of refrigerants, as advised under the head of Hæmoptysis, together with small doses of opium repeated twice or thrice a day, confining the patient at the same time to food of a light nutritive nature, and directing him to take some kind of acidulated beverage for his ordinary drink: but if these means do not quickly allay the hemorrhage, we ought then to employ powerful astringents and sedatives, as advised under the last-mentioned disease. During the use of these medicines, it will be neces-

sary, however, to give some gentle laxative (such as the oleum ricini) now and then, in order to obviate costiveness, and prevent any deleterious effects.

In hæmatemesis, I have the strongest reasons for presuming that there is not a more effectual astringent than the tinctura ferri muriati; for by being applied here immediately to the mouth of the bleeding vessel, it acts as a styptic. It may be given in doses of twenty or thirty drops in a little cold water, and be repeated every hour till the hemorrhage ceases.

It is said that large doses of spermaceti have been given in this disorder with success; but its use seems more likely to prove beneficial after it has ceased, than during its continuance, particularly where the effusion is considerable. If the practitioner is disposed to make a trial of it in mild cases, he can give it as below.*

When the hemorrhage has stopped, it will be advisable to discover, if possible, the cause from which it proceeded, and by removing that or the primary disease, to prevent any return of the complaint.

Where hæmatemesis arises in putrid diseases, we must have recourse to the most powerful antiseptics.

A modern writer† informs us, that he has met with a variety of this disease in females from eighteen to thirty years of age, and by no means originating in organic affection of the stomach or viscera connected with it, that resisted the usual routine of treatment with cold acidulated liquors and different emmenagogues, but which readily gave way by procuring copious and free alvine evacuation by the exhibition of purgatives.

Of the VOIDING of BLOOD by URINE, or HÆMATURIA.

THIS disease is sometimes occasioned either by falls, blows, bruises, or some violent exertion, such as hard riding and jumping; but it often arises from a small stone lodged either in the kidney or ureter, which by its size or irregularity wounds the inner surface of the part it comes in contact with; in which case the blood discharged is most usually somewhat coagulated, and deposits a sediment of a dark brown colour, resembling the grounds of coffee. It is rarely, if ever, an idiopathic disease.

† See Observations on the Utility of Purgative Medicines, by Dr. Hamilton, page 109.

* ℞. Sevi. Ceti. ℥fs.
Vitel. Ovi q. s. Terantur in Mortar. marmoreo, et adde
Aq. Pulegii ℥j.
——Fontan. ℥v.
Nitri Purif. ℈j.
Syrup. Tolutan. ℥ij.
Tinct. Opii gutt. L. M.
fr. Mistura, cujus sumat Cochl. larg. iij. 3tia vel 4ta quaq. hora.

A discharge of blood by urine, when proceeding from the kidney or ureter is commonly attended with an acute pain in the back, and some difficulty of making water, the urine which comes away first being muddy and high-coloured, but towards the close of its flowing becoming transparent, and of a natural appearance. When the blood proceeds immediately from the bladder, it is usually accompanied with a sense of heat and pain at the bottom of the belly.

The voiding of bloody urine is always attended with some danger, particularly when mixed with purulent matter. When it arises in the course of any malignant disease, it shews a highly putrid state of the blood, and always indicates a fatal termination.

The appearances to be observed on dissection will accord with those usually met with in the disease which has given rise to the complaint.

In the treatment of hæmaturia we must be guided by the cause which has occasioned it.

If it has arisen in consequence of some external injury, such as a blow or fall, it may then be proper to make use of evacuation by bleeding, the patient taking a couple of table-spoonfuls of an infusion of roses, with a small quantity of nitre dissolved in it, every two or three hours, and employing some gentle purgative, such as the oleum ricini, every second or third day, to keep the body open.

When it proceeds from a stone either in the kidney, ureter, or bladder, it is only to be cured by removing the cause; but as this may not be always practicable, we must then be contented to moderate the symptoms, by making the patient drink plentifully of mucilaginous liquors, such as thick barley-water, solutions of gum arabic, or a decoction of marsh-mallows sweetened with honey; by giving him repeated small doses of opium joined with refrigerants, as advised under the head of Hæmoptysis, and by throwing emollient clysters frequently up the intestines.

A case of hæmaturia is recorded in the 8th volume of Medical Facts and Observations, which had resisted repeated bleedings and warm bathing, saline purgatives, emetics of different kinds, camphor and opium in large doses, uva ursi, mephitic alkaline water, &c. and which was quickly and effectually removed by giving the patient a pint a day of a decoction of peach-leaves. This was prepared by boiling an ounce of dried leaves of the peach-tree (Amygdala Persica, Linn.) in a quart of water, till it was reduced to a pint and a half.

When hæmaturia is symptomatic of some malignant disease, as putrid fever, &c. powerful antiseptics must be administered.

Of an IMMODERATE FLOW of the MENSES, or MENORRHAGIA.

A FLOW of the menses is to be considered as immoderate, when it either returns more frequently than what is natural, continues longer than ordinary, or is more abundant than is usual with the same person at other times.

The usual period of its visitations is from twenty-seven to thirty days. As to the time of its continuance, this is various in different women; but it seldom continues longer than six days, or less than three, and does not cease suddenly, but in a gradual manner. The quantity generally discharged in a healthy and regular woman, is from four to six ounces at each visitation. Those of a lax and delicate constitution have, however, a more copious and longer continued discharge than persons of a robust habit.

The causes of menorrhagia may be referred to,

1st, A plethoric state, or general fulness of habit.

2dly, Accidental circumstances determining the blood more copiously and forcibly into the uterine vessels, as violent exercise in dancing, strokes or contusions on the belly, strains, and violent passions of the mind.

3dly, Irritations acting particularly on the uterus, as great costiveness obliging the person to much straining at stool; excess in venery, particularly during menstruation, or the application of wet and cold to the feet, which may determine a greater flow of blood than natural to the uterus.

4thly, Laxity and debility of the organ, arising from frequent childbearing, difficult and tedious labours, or repeated miscarriages.

5thly, Those which induce debility of the whole system, as a sedentary and inactive life, indulging much in grief and despondency, living upon a poor low diet, drinking freely of warm enervating liquors, (such as tea and coffee,) and living in warm chambers; and,

6thly, Organic affections, such as scirrhus, polypus, ulceration, &c.

An immoderate flow of the menses arising from plethora, is often preceded by head-ach, giddiness, or dyspnœa, and is afterwards attended with pains in the back and loins, some degree of thirst, universal heat, and a frequent, strong, hard pulse; but where it arises in consequence of a laxity of the organ, or of general debility, and such attacks are frequently repeated, the symptoms which attend are, paleness of visage, chilliness, laxity and flabbiness in the muscular fibres, unusual fatigue in exercise, a hurried respiration on the slightest effort, pains in the back, on remaining any length of time in an erect posture, and coldness of the extremities, together with loss of appetite, indigestion, and a long train of nervous complaints.

If the disease has induced much debility by frequent and severe attacks, it is no uncommon occurrence for the feet to be affected with œdematous swellings, particularly towards the evening, and for a leucophlegmatic habit to take place.

In forming our prognostic in this disease, we must be directed by the nature of the cause which has given rise to it. If occasioned by plethora, or a general fulness of the system, we need apprehend no danger, as a temporary debility will be the only inconvenience the woman will experience; but where it is produced by a laxity of the vessels of the organ, and is profuse, long continued, and of frequent recurrence, there will always be a risk of its inducing much general debility, and a leucophlegmatic habit. Where it arises from an organic affection of

the part, which is sometimes the case after the age of 45, it is usually deemed incurable.

When menorrhagia proves fatal in consequence of a scirrhus of the uterus, this organ is observed on dissection to be much increased in size, and its substance to be thick and hard, and when cut into, shews a firm structure intersected with membranous septa. The internal surface is at the same time usually ulcerated, and beset with ragged processes, and from these ulcerated parts the hemorrhage proceeds.

If polypi are the organic affection, these on dissection are generally to be found adhering to some part near the neck of the womb, and they are surrounded with varicose vessels, which throw out the blood in considerable quantity, when a rupture of any of them happens to take place.

Where a profuse flow of the menses is attended with pains in the back, and the patient is of a full and robust habit, it may be proper to draw off a few ounces of blood; but in other instances, venesection may very safely be omitted.

In general, it will be sufficient to employ the other antiphlogistic means, such as keeping the body gently open with laxative medicines that give but little stimulus;* administering refrigerants,† such as nitre; making use of a spare regimen; drinking freely of cool acidulated liquors, such as lemonade or tamarind beverage, and keeping the chamber of a moderate temperature, and the bed lightly covered with clothes. Besides adopting these means, the patient is to avoid an erect posture, and all such things as might prove exciting causes.

By avoiding these, and moderating the first beginnings of the disease, it is probable that women might in most cases prevent that debility which repeated and severe attacks are apt to occasion.

When no symptoms denoting an increased action in the vessels of the uterus are present, and we suppose that the hemorrhage has arisen in consequence of a laxity of the vessels, besides keeping the woman in a recumbent posture, shunning much external heat, making use of refrigerants internally, and avoiding venery, costiveness, and the other remote causes, we should have recourse to sedatives and astringents, both of which may be used externally, as well as internally.

Linen cloths dipped in vinegar and water, and kept constantly applied to the back and private parts, have a powerful effect in many cases of uterine hemorrhage. These means ought therefore always

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* ℞. Kal. Tartarisat. ℥ss.
Mannæ Optim. ℥iij.
Aq. Fervent. ℥iij.
Tinct. Lav. C. ℥ss. M.
ft. Mistura cujus sumat dimidium pro dos.
Vel
℞. Magnes. Vitriolat. ℥ij.
Aq. Fervent. ℥vj.
Tinct. Sennæ C. ℥ss.
Syr. Rosæ ℥ij. M.
Cochl. larg. iv. pro dos. sumenda.

† ℞. Kal. Præparat. ℈j.
Succ. Limon. ℥ss.
Nitri Purif. gr. xv.
Aq Font. ℥jss.
Syr. Violæ ℥ij. M.
ft. Haustus 3tia hora capiendus.
Vel
℞. Infus. Rosæ ℥ij.
Nitri ℈ss.
adde pro re nata
Tinct. Opii gutt. xv. M.
ft. Haustus 4ta hor. repetendus.

to be employed in those instances where the discharge of blood is profuse.

Opium has been much used internally in menorrhagia, and where the patient experiences spasmodic pains in the uterus, it undoubtedly will prove a very valuable and useful medicine. On such occasions it may be given in small and frequently repeated doses, combined either with refrigerants or astringents; but as opium possesses the power of greatly relaxing the system when used liberally, it ought not to be administered in cases of general debility, unless under the circumstance just mentioned.

The astringents most employed in this disease are, alum, catechu, gum kino, and Armenian bole, which may be given as advised below,* or as prescribed under the heads of Hæmoptysis and Abortions. Vitriolated zinc, or cerussa acetata, may be substituted in cases of profuse hemorrhage. (See Hæmoptysis.) We may give the latter in doses of one, two, or even three grains, every three or four hours, according to the urgency of the symptoms.

In those cases where the hemorrhage is profuse, and resists the means already recommended, it will be proper to throw up astringent injections into the uterus. Any of those here † prescribed may be used on the occasion.

Where symptoms denoting an increased action in the vessels of the uterus are observable, it would probably be right to give the digitalis as advised under the heads of Abortions and Hæmoptysis. In a few cases of this nature, I have employed it with a good effect.

Where menorrhagia proceeds from a scirrhous or ulcerated state of the uterus, all that can be done is to afford a temporary relief by ad-

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* ℞. Aluminis gr. xij.
Gum. Kino gr. viij.
Conferv. Roſæ q. s. M.
ft. Bolus 3tia vel 4ta hora ſumendus.
Adde pro re nata
Opii gr. ſs.

Vel

℞. Terr. Catechu gr. xij.
Aluminis Purif. gr. x.
Conferv. Roſæ q. s. M.
ft. Bolus.

Vel

℞. Bol. Armen.
Alum. Rup. āā ℈ſs. M.
ft. Pulvis.

Vel

℞. Seri Aluminos. ℥iij. pro dos.

Vel

℞. Decoct. Cinchon. ℥ij.
Alum. Purif. gr. xij.
Tinct. Kino ℥j.
Opii gutt. xx. M.
ft. Hauſtus 3tia quaque hora ſumendus.

† ℞. Infus. Cort. Querc. ℥vj.
Aluminis ℥j. M.
ft. Inject.

Vel

℞. Zinc. Vitriolat. gr. xv.
Ceruss. Acetat. ℥j.
Aq. Distillat. ℔j. M.

Vel

℞. Aluminis ℈iv.
Zinc. Vitriolat. gr. x.
Aq. Rosæ ℥viij. M.

Vel

℞. Gallæ Contus. ℥ſs.
Aq. Fervent. ℔ij. M.

ministering opium in considerable doses. A combination of it with the extract of hemlock might possibly add somewhat to its palliative effect. Hyoscyamus may likewise be tried.

In those cases where menstruation becomes profuse, continues longer than ordinary, or returns more frequently than what is natural in consequence of general laxity in the system, it will be proper for the patient, during its intervals, to enter on a course of tonic medicines, such as the yellow Peruvian, or Angustura bark, myrrh, and preparations of steel, which may be given as advised below,* or under the head of Dyspepsia.

To assist the effect of these remedies, she may make use of cold bathing, together with gentle horse exercise and a generous nutritive diet. Where chalybeate springs can be resorted to with convenience, a use of these waters will be likely to afford much benefit.

When, from great weakness and relaxation in the uterine parts, the patient is troubled with a profuse menorrhagia, or with fluor albus, she will often experience great relief from Tunbridge water, or any other such chalybeate spring; and as this state of local debility is very frequently a cause of abortion or barrenness, these waters have often been the means of removing such unpleasant circumstances.

With regard, however, to hemorrhagy from the uterus, it is often accompanied with a degree of general fever, pains in the back and loins, and local irritation, when every internal stimulant medicine would aggravate the disorder; and therefore the use of chalybeate waters in these cases, requires much judgment and a proper discrimination.

To repress the too great or permanent menstruation, which occurs in weak constitutions at the time of life when it ought to cease, we should have recourse to chalybeates, alum, bitters, and opium, the last of which may be administered in the dose of a grain every night, with about five grains of rhubarb.

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* ℞. Gum. Myrrh. ʒj. solve in Mortario cum
Aq. Alexet. Simpl. ℥vj.
—— Cinnam. ʒj. et adde
Kal. Præparat. ʒfs.
Ferri Vitriolat. ℈j.
Syrup. Simpl. ʒij. M.
ft. Miſtura in Hauſtus iv. diſtribuenda, quorum sumat j. mane, hora quinta poſt meridiem, et hora decubitus.

Vel

℞. Decoct. Cort. Peruv. ℥jfs.
Tinct. —— Angustur.
——— Card. C. ää ʒj. M.
ft. Hauſtus.
Adde pro re nata
Acid. Sulph. Dilut. gutt. xx.

Of the PILES, or HÆMORRHOIS.

THE piles consist of small tumours situated on the verge of the anus, which are sometimes separate, round, and prominent, but sometimes the tumour consists only of one tumid or varicose ring surrounding it. In some cases there is a discharge of blood from these tumours, particularly when the patient goes to stool, and then the disease is known by the name of bleeding piles; and in others there is no discharge, when it is called blind piles.

These affections may be occasioned by habitual costiveness, plethora, hard riding, excesses of various kinds, the suppression of some long-accustomed evacuation, and by a use of strong aloëtic purges; and are most apt to arise in those of a robust habit, and who lead a sedentary life. Pregnant women are frequently afflicted with the piles, owing to the pressure of the uterus upon the rectum, which interrupts the return of venous blood from that part, and the costive habit to which such women are usually liable.

The piles are sometimes accompanied by a sense of weight in the back, loins, and bottom of the belly, together with a pain or giddiness in the head, sickness at the stomach, and flatulency in the bowels. On going to stool, a pungent pain is felt in the fundament, and small tumours are perceived to project beyond its verge. If these break, a quantity of blood is then voided, and a considerable relief from pain is obtained; but if they continue unbroken, the patient in that case experiences great torture every time he goes to stool, and feels an inconvenience even in sitting down on any hard seat.

Hæmorrhoids are by no means dangerous, but they often prove both troublesome and disagreeable. In some instances they are to be regarded as a salutary evacuation. Hæmorrhoidal tumours are sometimes attended with a considerable degree of inflammation, which proceeding to a suppuration, terminates in sinuous ulcers.

Dissections of piles shew that the tumours consist partly of the fine skin round the anus on the outside, and partly of the internal membrane of the gut. In general, they are entire, but they sometimes have small openings in them through which the blood issues.

In the treatment of piles, due attention should be paid to the cause from which they have arisen: and as costiveness is one of the most frequent, the bowels ought to be kept open and regular by medicines which will prove gently laxative,* without irritating the rectum; and

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* ℞. Elect. e Senn. ℥iij.
Pulv. Jalap. ʒij.
Kali Nitrat. ʒjss.
Syr. Spin. Cervin. q. s. M.
ft. Electuarium de qua sumat magnitud. juglandis pro re nata.
Vel

℞. Flor. Sulph. ℥j.
Elect. e Senn. ℥ij.
Cryftal. Tart. ʒiij.
Syrup. Rosæ q. s. M.
ft. Electuarium.
Vel
℞. Ol. Ricini ʒvj.—℥j.
Vel

as a habit may be acquired, it will be right for the patient to observe stated times in the day for endeavouring to obtain motions.

When the tumours are attended with much pain, and a considerable degree of inflammation, it may be advisable to apply a few leeches; after which, pledgets wetted in a solution of cerussa acetata may be laid on, the patient taking care after each stool to anoint the parts with some kind of emollient ointment.* In these cases, fomentations and poultices are likewise employed. In plethoric habits, small doses of nitre may prove serviceable, particularly if mixed with sulphur. Balsam of copaiba given to the extent of forty or fifty drops morning and evening, often relieves the pains so frequently produced by piles.

In some cases, where the tumours are numerous and tumid, relief may be obtained by making a firm and gentle pressure of each pile between the finger and thumb.

In a most violent case of external and internal hæmorrhoidal affection, which had resisted judicious treatment for five weeks, Dr. M'Lean mentions † that almost immediate relief was obtained by giving the patient forty drops of the tinctura digitalis, and that a rapid recovery was effected by repeating thirty-five drops evening and morning. It is observed, that when he first applied for advice, his countenance was pale and sallow, his strength and flesh much exhausted; he walked with extreme pain and difficulty, his pulse was quick and small, and his appetite impaired; in a week the contrast was very striking.

If a prolapsus ani attends the piles, the part is carefully to be replaced each time after going to stool, by laying the patient in a horizontal posture, and pressing gently with the fingers, till the reduction is effected. Its return is to be prevented by avoiding the occasional causes as much as possible; and where it proceeds from a laxity of the rectum, besides applying a proper bandage, we may employ astringents both internally ‡ and externally. Pledgets dipped in a strong infusion of galls, or oak bark, may be kept constantly to the parts as an external astringent, and they may be anointed from time to time with an

† See Medical and Physical Journal, vol. iv. p. 134.

Vel

℞. Pulv. Jalap. ℈j.
Cryst. Tartar. ℈ij. M.
ft. Pulv. pro dos.

* ℞. Unguent. Spermat. Ceti ℥ij.
Tinct. Opii ℥j. M.
ft. Unguentum.

Vel

℞. Unguent. Ceruss. Acet. ℥ij.
Opii ℥ij. M.

Vel

℞. Unguent. Sperm. Ceti.
—— Camphor. āā ℈ss.
Pulv. Opii ℈ss. M.

‡ ℞. Pulv. Terr. Catechu gr. viij.
—— Aluminis gr. x. M.
ft. Pulvis ter in die sumendus.

Vel

℞. Gum. Kino gr. vj.
Aluminis gr. x.
Conserv. Rosæ q. s. M.
ft. Bolus.

ointment * possessing similar virtues. As a general tonic, cold bathing may be employed with advantage.

It has been noticed that hæmorrhoids are to be regarded in some instances as a salutary evacuation. In all such, therefore, the hemorrhage should not be stopped.

In those cases where it is so profuse as to occasion great loss of strength, we must have recourse to astringents both internally and externally, as has just been advised, taking care to obviate costiveness by some gentle laxative.

Where the hemorrhage has been very considerable, good effects have been derived from the early application of pressure, made by introducing up the rectum, a piece of sheep's or pig's gut tied at one end, and by filling it at the other extremity with any cold liquid, such as vinegar and water, forcing up the liquid so as to increase the degree of pressure, and then securing it with a proper bandage.

When the hemorrhage proceeds from tumours seated high up in the rectum, and is so severe as to induce great debility, we may throw up some astringent injection, † if it cannot be stopped by the means just recommended.

In those cases where the discharge has become habitual, arising from plethora, this state of fulness must be prevented by moderate exercise on foot, or in a carriage, by the use of a spare diet, by taking cooling purgatives from time to time, and by carefully avoiding all strong liquors.

An internal use of Harrogate water is a remedy from which great benefit is derived in the piles. The advantages of sulphur as a mild unirritating purgative, and one which seems to continue its operation through the whole of the intestinal tube, has long established its virtue in those hæmorrhoidal affections that require this evacuation; and the neutral salts, with which it is united in this mineral water, cannot but contribute to its efficacy.

Those who are afflicted with piles should shun all such causes as may either increase the determination of blood into the hæmorrhoidal vessels, or prevent its return back from them, but more particularly riding on horseback.

During the continuance of this complaint the diet should be cool and nutritious, consisting principally of vegetables, ripe fruits, jellies,

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* ℞. Adipis Suillæ ℥j.
Camphor. ʒfs.
Pulv. Gallarum Subtilis. ʒij.
Tinct. Opii ℥j. M.
f. Unguentum.

† ℞. Cort. Querc. Contus. ℥j.
Aq. Fontan. ℔ij.
Coque ad ℔j. Colaturæ adde
Aluminis ʒij.
Tinct. Opii ℥j. M.
ft. Injectio.
Vel
℞. Zinc. Vitriolat. ℥fs.
Aq. Rosæ ℔j. M.
Vel
℞. Gallæ Contus. ℥fs.
Aq. Fervent. ℔ij. Col.

broths, &c. Fermented and spirituous liquors will be hurtful, and therefore the patient should only drink cooling acidulated liquors, water, or toast and water.

When, in consequence of piles, the rectum becomes so much affected as to threaten the patient with a fistula, we may recommend a use of Dr. Ward's celebrated paste,* as inserted in the Pharmacopœia Chirurgica, which is to be prepared in the following manner: The three first ingredients are to be finely powdered and well mixed, after which, the honey and sugar melted together over the fire, and formed into a clear syrup, are to be added, and the whole beaten together into a mass.

ORDER V.

OF PROFLUVIA, OR FLUXES WITH PYREXIA.

PYREXIA with an increased excretion, not naturally bloody, is the definition given of this order of diseases.

OF THE CATARRH, OR CATARRHUS.

A CATARRH consists in an increased excretion from the mucous membrane of the nose, throat, and bronchiæ, attended with some slight degree of fever.

It attacks persons of all ages and constitutions, but more particularly the young, and those who have had any former affection of the lungs; and it may take place at any time of the year when there are sudden changes of the weather from heat to cold, and *vice versa*. In the former instance, the application of cold to the body seems evidently to be the remote cause of the disease; and in the latter, it appears to depend on a specific contagion, having, in the years 1732 and 1733, spread in a progressive manner over the whole of Europe, and part of America, and in 1785 and 1803, over the whole of Britain. When the disease has prevailed epidemically in this manner, the term of influenza has been applied to it.

The proximate, or immediate cause of catarrh, seems to be an increased afflux of fluids to the mucous membrane of the nose, fauces, and bronchiæ, producing some degree of inflammation in these parts.

Catarrh is to be distinguished from the measles by the great mildness of the febrile symptoms, and by the absence of many of the symptoms accompanying the latter.

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* ℞. Rad. Enul. Campan.
Piperis Nigri singul. ℔ss.
Seminum Fœnicul. Dulc. ℔jss.
Mellis Despumati.
Sacchar. Purificat. singul. ℔j. M.
fr. Pasta de qua capiat quantit. nuc. mosch. bis terve de die.

The disease usually comes on with a dull pain, or sense of weight in the forehead, a redness of the eyes, and a fulness and heat in the nostrils, which symptoms are soon followed by the distillation of a thin acrid fluid from these parts, together with a soreness in the trachea, hoarseness, frequent sneezing, some difficulty of breathing, a dry cough, loss of appetite, general lassitude over the whole body, and chilliness; towards evening, the pulse becomes considerably quickened, and a slight degree of fever arises.

In the progress of the disorder, the cough is attended with an excretion of mucus, which at first is thin, white, and expectorated with some difficulty; but becoming gradually thicker and of a yellow colour is at length brought up with greater ease and less coughing.

Even where there is not much affection of the system, it often happens that the natural evening paroxysm is considerably increased; and from restlessness, and frequent coughing, the patient is prevented from sleeping till the morning, at which time a crisis takes place for the present, and he then remains tolerably easy until the return of the evening paroxysm.

When the secretion of mucus ceases, the inflammation goes off also, so that a natural cure almost always arises in the disease.

Catarrh is seldom attended with fatal consequences, except when it either arises in elderly persons, attacks those of a consumptive habit, or has been much aggravated by some fresh application of cold, or by improper treatment; and it usually terminates in the course of a few days, either by an increased expectoration, or a spontaneous sweat. In some instances it, however, lays the foundation of phthisis pulmonalis.

The inner membrane of the trachea usually appears on dissection, in fatal cases of catarrh, to be much inflamed, and its cavity to be filled with a considerable quantity of mucous fluid. The same morbid state is likewise communicated to the lungs, which seem loaded with matter of a similar nature, producing suffocation.

In mild attacks of this disease, it may not be necessary to have recourse to the aid of medicine. In general it will be sufficient to confine the patient to bed, and to make him use an abstemious regimen, and drink plentifully of warm diluent mucilaginous liquors, such as barley-water, &c. acidulated with a small quantity of lemon-juice, or crystals of tartar; but in violent attacks, where there is great difficulty of breathing, much febrile heat, and a full frequent pulse, it will be necessary, besides adopting these means, to guard against the effects of general inflammation, and to employ various remedies.

In those cases, therefore, where there is much general affection of the system, we should have recourse to the lancet, proportioning the quantity of blood which we draw off, to the violence of the symptoms, and the age of the patient.

If the difficulty of breathing and oppression at the chest are not soon relieved by venesection, local blood-letting will be advisable, after which it will be proper to apply a blister either to the back, or over the part affected; which application will seldom fail to afford relief.

To encourage a determination to the surface of the body, and promote expectoration, it will be necessary to administer small and frequently repeated doses of antimonials, as advised under the head of Simple Continued Fever, or other diaphoretics, as prescribed below;* the effect of which may be assisted by making the patient drink plentifully of mucilaginous diluent liquors acidulated, and confining him to bed.

Volatile alkali is a very powerful diaphoretic, and particularly if administered in wine-whey. Twenty or thirty drops of liquor vol. corn. cervi, in half a pint of wine-whey, if the patient is kept in a moderately warm bed, will soon elicit a profuse sweat. Neutral salts promote insensible perspiration, when the skin is not warmed much externally. When these are sufficiently diluted with water, and given, a copious perspiration is procured. Half an ounce of vinegar saturated with volatile alkali (as in the aqua ammon. acetata,) and taken every two or three hours, will answer this purpose very well.

Nitre is a medicine which is often given in this disease, as well as in gonorrhœa. In the latter it will be sure to augment the pain by its stimulus on the excoriated or inflamed urethra; and, in the former, where the discharge is too thin or saline, it cannot fail to increase the coughing.

The secretion of mucus in the lungs and fauces may likewise be assisted by administering pectorals of the attenuating class, such as squills, gum ammoniac, &c.† and by applying to them repeatedly, throughout the course of the day, the steams arising from warm vinegar and water, by means of Dr. Mudge's inhaler.

When the cough is troublesome, and there is great soreness and rawness in the fauces, demulcents‡ may be used with advantage; and

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* ℞. Succ. Limon. ℥jfs.
Ammon. Præparat. ℈jfs.
Aq. Fontan. ℥v.
Antimon. Tartarisat. gr. jfs.
Syrup. Tolutan. ℥fs. M.
ft. Mistura cujus sumat Cochl. larg. ij. tertia quaq. hora.

Vel

℞. Aq. Ammon. Acetat. ℥fs.
Mistur. Camphorat. ℥j.
Vin. Antimon. gutt. xxv.
Syr. Althææ ℥ij. M.
ft. Hauſtus.

Vel

℞. Camphor. gr. iv.
Pulv. Antimon. gr. ij.
Conserv. Rosæ q. s. M.
ft. Bolus.

† ℞. Lact. Ammon. ℥vfs.
Oxymel. Scillæ ℥fs. M.
ft. Mistura cujus sumat Cochl. larg. ij. quarta quaq. hora vel tusse urgenti.

‡ ℞. Mucilag. Gum. Arab. ℥v.
Ol. Amygdal. D. ℥j.
Syrup. Tolutan. ℥fs.
Aq. Ammon. ℥fs. M.
ft. Emulsio cujus sumat Cochl. larg. j. pro dos.

Vel

℞. Sevi Ceti (G. Arab. permixt.) ℥ij.
Syrup. Tolutan. ℥jfs.
Ol. Amyd. Dulc.
Conserv. Rosæ ää ℥fs. M.
ft. Linctus de quo sæpe lambat æger urgenti tusse.

Vel

℞. Mel. Optim.
Ol. Amygd. D. ää ℥ij.
Suc. Limon. ℥j.
Syrup. Tolutan. ℥ij. M.
ft. Linctus.

after the inflammatory symptoms have abated, opiates will afford effectual relief, and may be joined with the former.

Where the patient's rest is particularly disturbed in the night, an opiate* at bed time will be highly necessary, but it should be combined with some diaphoretic.

If costiveness prevails in the course of the disease, it ought to be removed by gentle laxatives.

When the mucous membrane of the nose is much affected, it may be smeared from time to time with a little tallow, or spermaceti ointment.

These are the remedies to be employed during the first stage of the disease: but it often happens, that after the inflammatory symptoms have subsided, a weakness remains, and there is an increased secretion from the lungs, which perhaps continues for many months, without the least appearance of purulence. In such cases, the patient is carefully to avoid all fresh exposures to cold, and he should defend himself by going warmly clothed.

Where the disease runs on for any length of time, or has become habitual, the patient should continue long in bed in the morning, so that the natural evening paroxysm of fever may be entirely carried off there, and he should go early to bed at night. He is likewise to abstain from wine, and all food which is hard of digestion; to breathe as pure open air as possible; and to use gentle exercise daily on horseback; which will take off the blood from the interior parts, and thereby diminish the internal secretions.

By paying a proper attention to the means which have been advised, by keeping up a constant inflammation on the breast by plasters of Burgundy pitch and blisters, or substituting a large scapulary issue, and by employing opiates to mitigate the cough, and tonics, we shall in general be able to remove all consequences of the disease.

If, notwithstanding these means, the cough should be dry, or be unattended with proper expectoration, and together with a soreness, produce shooting pains through the breast and between the shoulders, accompanied with difficulty of breathing, flushing in the cheeks after meals, a burning sensation in the hands and feet, and other symptoms of hectic fever, no time should be lost, as there is reason to fear that tubercular suppurations will follow. Under such circumstances, the steps advised in the treatment of phthisis pulmonalis ought immediately to be adopted.

It is necessary here to notice a species of catarrh, with which persons advanced in life, and who have had frequent attacks of such af-

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* ℞. Aq. Ammon. Acetat. ℥iij.
Mucilag. Gum. Arab. ℥j.
Syrup. Limon. ʒij.
Tinct. Opii gutt. xl. M.
ft. Hauſtus hora decubitus sumendus.
Vel
℞. Pulv. Ipecac. Comp. gr. xij.
ft. Pulvis sudorificus.

fections, are apt to be afflicted. They are seized with a cough, which at length becomes habitual and chronic, and continues for many years, proving extremely distressing. Its attacks are most common in the morning, and the ill-fated patient, otherwise in good health, is thrown into fits of coughing, which last a long time, and are only terminated by a free expectoration taking place, when relief is immediately obtained. Next morning, however, the same distressing symptoms again seize the enfeebled patient, and thus the little strength he may have to support him through the fatigues of the day, is nearly exhausted. In northern climates in particular, this species of catarrhal affection is very frequently to be met with among elderly people; and it seems to arise from an unusual quantity of mucus secreted in the bronchiæ, and perhaps in the lungs themselves, which by impeding respiration, or mechanically irritating these parts, produces the cough. From an inability to spit up the secreted phlegm, the patient is sometimes suffocated, as happened in a late instance which fell under my care. The best medicines we can employ in this species of catarrh are a combination* of myrrh, squill, and gum ammoniac. Digitalis† will be very likely to produce much benefit also in chronic coughs, accompanied with dyspnœa, great secretion of viscid phlegm, and any tendency to effusion into the cells of the lungs.

The catarrhal fever known by the name of Influenza, which prevailed so universally in most parts of this kingdom in 1803, as well as in France, where it was called La-gripe, first shewed itself in London towards the latter end of the month of February, when a damp and mild state of the atmosphere had succeeded to severe cold, and when this again had been followed towards the beginning of March by frost and keen easterly winds.

Like preceding epidemics of the same kind, this disease exhibited various degrees of morbid affection, having been in some instances so slight as not to incapacitate persons from following their ordinary occupations and pursuits, and scarcely to require the aid of medicine; while in others the attack was of so severe a nature as to endanger life, and even to destroy it. To young children and elderly people it proved very fatal indeed, but more particularly so to the latter. Those likewise of a middle age, who either laboured under habitual asthma, or had any predisposition to phthisis, experienced its dire effect.

It was generally preceded by chilliness and shiverings, which were

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* ℞. Pulv. Gum. Myrrh. ʒj.
Gum. Ammoniac. ʒfs.
Scillæ Pulv. gr. x.
Syrup. Tolutan. q. s. M.
ft. Massa in pilulas gr. v. dividenda.
Capiat ij. pro dos. omni mane et nocte.

Vel

℞. Gum. Myrrh. ʒfs. Solve in
Aq. Puræ ʒj. et adde
Lactis Ammoniac. ʒjv.
Oxymel. Scillæ ʒfs.
Tinct. Opii Camphorat. ʒj. M.
Capiat Cochl. amplum pro dos.

† ℞. Lactis Ammoniac. ʒv.
Oxymel. Scillæ. ʒfs.
Tinct. Digitalis gutt. xxx. M.
Capiat Cochl. amplum subinde, vel tusse urgenti.

succeeded by some degree of heat, pains in the head, a discharge from the eyes and nostrils, severe sneezing, hoarseness, and cough. In the course of a few hours the head-ach became much increased, as well as the heat; the pulse was quickened but small; the breathing was difficult and oppressed, or transitory stitches across the chest were felt. Some patients complained of pains in the shoulders and limbs, very much resembling chronic rheumatism, and there were instances in which the difficulty of breathing might be, in part, attributed to a similar affection of the intercostal muscles. The tongue was usually white; the thirst considerable; the bowels were costive; the urine was high-coloured and clear; and very frequently there was nausea at the stomach, with more or less of vomiting.

Towards the second or third night the cough became greatly aggravated, and was strong and almost incessant, being usually accompanied, even on its first coming on, with an expectoration of thin sharp mucus. The evening paroxysm of fever was likewise more severe, being attended with extreme anxiety and restlessness, as well as considerable heat, and often with a great confusion in the head and rambling. At this stage of the disease the pulse was usually from 100 to 120 strokes in a minute. Towards the morning there was commonly a remission of the febrile symptoms, but the cough continued urgent, and greatly interfered with the patient's getting any sleep after this time.

Where gentle perspirations came on early, and the bowels were kept open, the fever usually declined about the fifth or sixth day, and the urine, which was before high-coloured and clear, now became turbid, or deposited a copious sediment; but the cough continued for many days, the sputum being however of a milder quality and thicker consistence, and the expectoration more free. Depression of spirits, languor, and debility, which were universal attendants on this epidemic, together with restless nights, harassed the patients for a considerable length of time after the decline of the fever.

Such was the most common form of the disease, but its modifications were extremely numerous; for in some instances there was a violent head-ach with a swelling of the eyes or inflammation of the conjunctiva, or pains in the limbs, with but little catarrhal affection; in others the throat was principally affected, and in others again, a peripneumonic condition existed. In a few instances the fever assumed the typhoid type.

In the treatment of the influenza, bleeding was not much employed, and it was only had recourse to in those cases where the symptoms of pneumonia were very urgent, and the patient complained of great difficulty of breathing, or an acute pain in the side. Where dyspnœa prevailed, the application of a blister to the chest usually afforded considerable relief.

If nausea was complained of at the commencement, a gentle emetic proved serviceable; and where costiveness existed, as was usually the case, it was necessary to give some gentle laxative.

When there was no great degree of heat or fever present, it was by no means requisite to keep patients in bed; in such cases, confine-

ment to their chamber, with plentiful dilution, and a spare regimen, was sufficient; but when the febrile symptoms ran high, it was necessary to keep them in bed, and to administer diaphoretics. Small doses of the pulvis antimonialis, assisted by a solution of some neutralized salt, and given every three or four hours, seldom failed to excite a gentle determination to the surface of the body. Further than this was not proper; for immoderate sweating, and particularly at the decline of the disease, was sure to prove injurious, by adding to the languor and debility.

Some advantages were derived from a free use of the compound decoction of barley, and solutions of gum arabic, with the addition of a little syrup of lemons, in those cases where the fauces and throat were affected by rawness and soreness. Towards the decline of the disease, where the expectoration was both viscid and difficult, squills were employed with benefit. Where the cough proved very troublesome, and the febrile symptoms had subsided, an anodyne at night had a very good effect.

To counteract the languor and debility which invariably attended this epidemic, it was necessary, during a state of convalescence, to have recourse to tonics, such as decoction of the bark of cinchona, with the mineral acids; or some preparation of myrrh, with an infusion either of columbo-root or gentian, various formulæ of which are inserted under the head of Dyspepsia.

At the commencement of the disease, a spare, mild, and vegetable diet was most advisable; but at its decline, a generous one, with a moderate quantity of wine, was proper.

Many persons seemed to have relapses, and therefore it was found necessary to guard carefully against any fresh exposure to cold. In many instances, the period of convalescence was much protracted; and during the debility which prevailed in consequence of it, patients were liable to the attack of some chronic disorder that proved obstinate and tedious, but more particularly to chronic rheumatism.

By some physicians the disease was supposed to be contagious; by others not so: indeed its wide and rapid spread made many suspect some more generally prevailing cause in the atmosphere, as alone capable of accounting for its extensive and speedy diffusion. It arose, probably, at first from a peculiar state of the atmosphere, like other epidemics, and was afterwards kept up and propagated by contagion.

Of the DYSENTERY, or DYSENTERIA.

THE dysentery is a disease of a contagious nature, in which there is an inflammation of the mucous membrane of the intestines, accompanied with frequent stools, severe griping pains, a tenesmus, and some degree of fever; the stools, although frequent, being small in quantity, and without any natural fæces intermixed, but consisting principally of mucus streaked with blood. When the natural fæces do appear, it is

usually under the form of small, compact, hard substances, known by the name of scybala.

Dysentery occurs chiefly in summer and autumn, and is often occasioned by much moisture succeeding quickly to intense heat or great drought, whereby the perspiration is suddenly checked, and a determination made to the intestines. It is likewise occasioned by a use of unwholesome and putrid food, and by noxious exhalations and vapours; hence it appears often in armies encamped in the neighbourhood of low marshy grounds, and proves highly destructive; but the cause which most usually gives rise to it is a specific contagion; and when it once makes its appearance, where numbers of people are collected together, it not unfrequently spreads with great rapidity. A particular disposition in the atmosphere seems often to predispose, or give rise to the dysentery, in which case it prevails epidemically.

It frequently occurs about the same time with autumnal intermittent and remittent fevers, and with these it is often complicated. It is likewise frequently combined with typhus. A late writer* supports the proposition that the simple dysentery is of itself never contagious, nor the intermittent and remittent forms of the disease; that the combination with typhus is alone possessed of that property, and this, he insists, originates not in the virus specific to the dysentery, but in the contagion of fever. Others have however given it as their opinion, that the contagious matter consists in the mucous or purulent discharge from the membrane which lines the intestines, and not in the febrile perspiration or breath of the patients.

The dysentery is much more prevalent in warm climates than in cold ones; and in the months of August, September and October, which is the rainy season of the year in the West Indies, it is apt to break out, and to become very general among the negroes on the different plantations in the colonies. It likewise prevails much in the unhealthy parts of the East Indies, and in our factories on the coast of Africa, both during the wet season and some time after it. The body having been rendered irritable by the great heat of the summer months, and being exposed suddenly to much moisture with open pores, the blood is thereby thrown from the exterior vessels upon the interior, so as to give rise to dysenteries.

A distinction necessary to be made between the dysenteries of all climates is, that those which attack persons in perfect health may be considered in the light of what physicians term original diseases; whereas those fluxes which we meet with in persons much weakened by a fever, and reduced to a very low condition of body, are properly symptomatic, as they proceed chiefly from the patient's debility and weakness.

Dysentery may readily be distinguished from diarrhœa by the absence of fever in the last, the less degree of griping and tenesmus: the appearance of the stools, and the other symptoms, will further assist us.

* See Observations on simple Dysentery and its Combinations, by William Harty, M. B.

An attack of dysentery is sometimes preceded by loss of appetite, costiveness, flatulency, sickness at the stomach, and a slight vomiting, and comes on with chills succeeded by heat in the skin, and frequency of the pulse. These symptoms are in general the forerunners of the griping and increased evacuation which afterwards occur.

When the inflammation begins to occupy the lower part of the intestinal tube, the stools become more frequent and less abundant, and in passing through the inflamed parts, they occasion great pain, so that every evacuation is preceded by a severe griping, as also a rumbling noise.

The motions vary both in colour and consistence, being sometimes composed of frothy mucus streaked with blood, and at other times, of an acrid watery humour, like the washings of meat, and with a very fetid smell. Sometimes pure blood is voided ; now and then, lumps of coagulated mucus, resembling bits of cheese, are to be observed in the evacuations, and in some instances a quantity of purulent matter is passed.

Sometimes what is voided consists merely of a mucous matter, without any appearance of blood, exhibiting that disease which is known by the name of dysenteria alba, or morbus mucosus.

While the stools consist of these various matters, and are voided frequently, it is seldom that we can perceive any natural fæces among them, and when we do, they appear in small hard balls, called scybala, which being passed, the patient is sure to experience some temporary relief from the griping and tenesmus.

It frequently happens from the violent efforts which are made to discharge the irritating matters, that a portion of the gut is forced beyond the verge of the anus which in the progress of the disease proves a troublesome and distressing symptom, as does likewise the tenesmus, there being a constant inclination to go to stool, without the ability of voiding any thing, except, perhaps, a little mucus.

More or less of pyrexia usually attends with the symptoms which have been described, throughout the whole course of the disease, where it is inclined to terminate fatally, and is either of an inflammatory or putrid tendency. In the other case the febrile state wholly disappears after a time, while the proper dysenteric symptoms probably will be of long continuance.

When the symptoms run high, produce great loss of strength, and are accompanied with a putrid tendency, and fetid and involuntary discharges, the disease often terminates fatally in the course of a few days : but when they are more moderate, it is frequently protracted to a considerable length of time, and so goes off at last by a gentle perspiration diffused equally over the whole body ; the fever, thirst, and griping then ceasing, and the stools becoming of a natural colour and consistence. When the disease is of long standing, and has become habitual, it seldom admits of an easy cure, and when it attacks a person labouring under an advanced stage of scurvy or pulmonary consumption, or whose constitution has been much impaired by any other disorder, it is sure to prove fatal. It sometimes appears at the same time

with autumnal intermittent and remittent fevers, as has before been observed, and is then more complicated and difficult to remove.

A great degree of tenesmus, severe griping pains, frequent inclination to go to stool and but little voided, much depression of strength, fetor of the evacuations, a tense abdomen, violent pyrexia, cold clammy sweats, coldness of the extremities, aphthæ, hiccup, petechiæ, and a weak irregular pulse, are to be regarded as very unfavourable symptoms. Whereas a gentle and universal diaphoresis, moderate pyrexia, the evacuations becoming less frequent and more of a natural consistence, and a gradual diminution of the griping and tenesmus, are favourable appearances.

Upon opening the bodies of those who die of dysentery, the internal coat of the intestines (but more particularly of the colon and rectum) appears to be affected with inflammation, and its consequences, such as ulceration, gangrene, and contractions. The peritonæum and other coverings of the abdomen, in many instances, have likewise an inflammatory appearance.

Two different stages seem evidently to exist in the course of this disease; wherefore, to treat it properly, due attention should be paid to that which is present at the time when advice is applied for.

In its first stage, if the patient is young and plethoric, and there are symptoms of an inflammatory disposition present to justify bleeding, we may then take away a small quantity of blood; but if the febrile or inflammatory symptoms do not run high, and the pulse is not very full and strong, we should by no means have recourse to the operation, as the fever which accompanies a dysentery is very apt in the course of the disease to assume a typhoid type, particularly in warm climates.

It has been a matter of doubt with some physicians whether to consider the inflammation that attends on dysentery, as the consequence, or cause, of the disease. My own opinion is certainly in favour of the latter; but nevertheless I do not recommend an indiscriminate use of the lancet, but, on the contrary, a cautious one.

In most cases we may begin the cure by giving a gentle emetic in the evening, and the next morning we may administer some proper laxative,* which should be repeated every second or third day, in order to procure an evacuation of natural fæces, which seldom pass off in any quantity, unless by artificial means.

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* ℞. Natri Vitriolat. ℥j.
Mann. Optim. ℥fs.
Aq. Fervent. ℥iij.
— Cinnam. ℥fs. M.
ft. Hauſtus.

Vel

℞. Fruct. Tamarind. ℥jfs. Decoque ex
Aq. Puræ ℥x. ad ℥vij.
Colat. adde Mann. Opt. ℥j.
Kal. Tartarisat. ℥fs. M.
ft. Solutio cujus ſumat dimidium primo mane, et quod restat post horas duas, si sit necessitas.

Vel

℞. Ol. Ricini ℥j. pro dos.

Should these prove too mild, and not procure copious stools, we must then employ stronger purgatives.† Some practitioners are in the habit of combining emetic and purgative medicines,‡ such as some of the mild neutral salts, with tartarised antimony, and often with a very good effect.

With the view of determining the circulation to the surface of the body, small doses of some diaphoretic § may be taken every three or four hours, after proper evacuations, so as to produce and keep up a gentle perspiration without exciting much nausea. By these means we may be able sometimes to cut the disease abruptly short and arrest its progress.

Cerated glass of antimony has been much extolled by Sir John Pringle for its great efficacy in the cure of dysentery, and may therefore be given if the other medicines are not found to answer. The dose for an adult is about eight grains; but it will be most advisable to begin with four or five grains, increasing the dose according to the effect produced.

A novel method of using emetic medicines in dysentery has been recommended by a late writer;‖ and we are assured by him, that he has found the practice highly successful. This is in the form of a clyster; and that which he has experienced to answer best, has been about three drachms of ipecacuanha-root, bruised and boiled in a quart of water down to a pint, which he repeats twice or thrice in twenty-four hours.

If dysentery is accompanied with violent retchings or a severe vomiting on its attack, so as to threaten the patient with cholera morbus, neither emetics, purgatives, nor diaphoretics will be advisable at first. In such cases the stomach must be evacuated of its contents by the gentle stimulus of large draughts of chamomile-tea. The same, or weak broth, may be thrown up the intestines in the form of clysters until these are cleansed; after which an opiate should immediately be given. If the opium is rejected, a double quantity of it is then to be administered in a clyster.

Should the vomiting continue very obstinate notwithstanding these means, the safety of the patient will then depend on bathing the

‖ See Observations on the Nature and Cure of the Diseases of the East and West Indies, by Thomas Clarke, Surgeon.

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† ℞. Calomel. gr. v.
Pulv. Jalapii ʒfs.
Syr. e Spin. Cerv. q. s. M.
ft. Maff. in Pilulas vj. pro dos. dividenda.

‡ ℞. Infus Sennæ Simp. ℥v.
Kal. Tartarifat. ʒj.
Antimon. Tartar. gr. ij. Solv.
Hujus Miſturæ sumantur Cochl. iv. quolibet trihorio, donec venter rite ſolutus fuerit.

§ ℞. Pulv. Ipecac. gr. iij.
Conſerv. Roſæ gr. xij. M.
ft. Bolus 4tis horis ſumendus.

Vel

℞. Pulv. Ipecac. Comp. gr. v.
Confect. Aromat. gr. x. M.
ft. Bolus.

region of the stomach well with tincture of opium and camphorated spirits; on repeating the clysters frequently with a proper quantity of opium in each; and on adopting the other steps advised under the head of Cholera Morbus.

In dysentery, when the abdomen is hard, tense, and painful to the touch, and the gripings are frequent and severe, the application of flannels wrung out in a warm decoction of chamomile-flowers and poppy-heads with a small addition of camphorated spirits, to the part, may afford considerable relief; but should fomentations not procure the desired effect, a blister ought to be put on. Most cases of dysentery, and particularly during the acute stages of the disease, may be relieved by immersing the patient in a warm bath of a moderate temperature, and keeping him in it for some time. Perhaps rubbing the abdomen with some warm and stimulating oil on his being taken out of the bath, might increase its effect.

To defend the inner coat of the intestines from the acrimony of its contents, and to counteract the vain attempts at evacuation, it will be necessary to give something to be discharged. Here then we should not only administer mucilaginous substances, such as solutions of gum arabic in milk, preparations of barley, rice, arrow-root, &c.* by the mouth; but we should likewise inject a clyster of a similar nature † three or four times in the course of the day. All vain attempts, to go to stool, as also all violent strainings in evacuating the contents of the bowels, ought carefully to be avoided by the patient.

If the fundament becomes inflamed or excoriated, the parts should be anointed with a little soft pomatum or hog's lard, after each evacuation.

In the cure of Indian dysentery, mercury is the remedy‡ now much relied on, but it is to be employed in an early stage of the disease. The plan recommended is, to give calomel in a considerable dose night and morning without interruption, accompanied by a mercurial friction of the abdomen until the mouth becomes sore. If diarrhœa ensues, this symptom is not to be interfered with, but rather encouraged by an occasional purgative of vitriolated natron, or rhubarb.

In addition to mercury, the nitric acid, it appears, has also been often employed. I am much inclined to doubt, however, whether these remedies, even in moderate doses, will be found useful, or even innocent, in the cure of real dysentery. Indeed I should think they could not

‡ See M'Gregor's Medical Sketches; Clarke on the Diseases of warm climates; Milne's Account of the Diseases that prevailed during two Voyages to the East Indies.

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* ℞. Gum. Arab. ℥ij. Solv. in Decoct. Hordei ℔ij. et adde Syrup. Limon. ℥ij.
Bibat pro potu ordinario.
Vel
Decoct. Corn. Cerv.

† ℞. Gelatin. Amyli ℥v. Gum. Arab. Sol. ℥ss. Ol. Olivæ ℥j. M. ft. Enema.

fail in many instances to prove exceedingly hurtful, and particularly in the doses which are mentioned.

There are some grounds for presuming that the disease which the authors just quoted have called the dysentery of India, is in its nature, symptoms, and causes, and likewise in its method of treatment, very different from that which is described under this name in other countries; that it differs in nothing from the bilious fluxes so commonly to be met with there, and arises from an affection of the liver, for they describe the stools as being copious and liquid; frequently bilious, and seldom or never as containing scybala—symptoms by no means characteristic of true dysentery.

In the beginning of the disease it would be improper to employ either opiates or astringents; but in the second stage, where the patient's strength is exhausted by frequent returns of the complaint, proceeding rather from a weak relaxed state of the bowels, than from any remains of malignancy, a use of these remedies will prove both proper and beneficial, taking care to obviate costiveness, and evacuate the contents of the intestines from time to time, by administering a few grains of rhubarb, or some such gentle laxative.

In this stage of the disease, should the patient's rest be much disturbed throughout the course of the night from the frequency of the motions, we may direct an opiate* to be taken at bed-time.

The hyoscyamus, by its anodyne and gently laxative qualities, seems a medicine well adapted to this disease, and may be tried in preference to opium.

In habitual fluxes, which are complaints frequent with those who have suffered much sickness abroad, it is seldom indeed that relief can be obtained without the aid of opium, and it is often found necessary to add it to all the other medicines we administer. Opiates, especially those of the warmer kind, such as the confectio opiata, &c. are as valuable in these cases, as the bark of cinchona is in intermittents.

When the bowels have been effectually relieved, it often happens, after the disease has continued for some time, from the tender state of the rectum, that a severe and troublesome tenesmus remains. Under such circumstances, anodyne clysters are often beneficial; and where the introduction of a pipe may be likely to excite greater irritation in the rectum, speedy and effectual benefit may be derived from the insertion of a grain or two of opium in the form of a pill into it.

Opium combined with the nitric acid, agreeable to the prescription† here advised, has on various trials been found to have been at-

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* ℞. Aq. Cinnam. ℥j.
Spirit. Pimento ℥fs.
Tinct. Opii gutt. xl. M.
ft. Hauſtus.
Vel
℞. Confect. Aromat. gr. xv.
Opii gr. j.—ij.
Ol. Cinnam. gutt. iij. M.
ft. Bolus.

† ℞. Acid. Nitr. ℥ij.
Opii gr. ij.
Aq. Puræ ℥iij. M.
Capiat Cochl. i minimum ter quaterve die in quovis vehiculo.

tended with the best effects in the advanced stage of dysentery, when all other remedies have proved ineffectual, and even in cases where death seemed almost inevitable.*

The astringents best adapted for the cure of a dysentery, are the different preparations of Japan earth, gum kino, logwood, &c. which may be given as below,† the patient at the same time taking Port wine properly diluted with water for his ordinary drink. Lime-water, mixed with an equal proportion of milk, has been much recommended as a useful remedy in the latter stage of the disease. During my residence in the West Indies I was in the habit of recommending a strong decoction of logwood with the barks of pomegranate-fruit and the cushoo-cherry-tree, as an astringent drink, from which my patient seldom failed to experience a good effect.

In the advanced and chronic stage of the disease, as acidity at the stomach is apt to prevail at that period, absorbents, such as the mistura cretacea, pulvis cretæ compositus, aqua calcis, &c. combined with opiates, will be useful.

Where there exists an extreme degree of atony, and a frequent discharge of fæces without pain, small doses of zincum vitriolatum combined with opium have proved of singular utility in many instances.

The impaired tone of the intestines is likewise to be restored by a use of tonics and bitters,‡ together with a light nutritive diet and moderate exercise. The application of cold water to the abdomen, and particu-

* See Obſervations on the Effects of Nitrous Acid and Opium in the Cure of Dyſentery, in vol. iii. p. 413, of the Medical and Phyſical Journal.

† ℞. Extract. Lign. Campech. ʒj.
Miſt. Cretac. ℥iv.
Tinct. Catechu ʒij.
Spirit. Nuc. Moſch. ʒj. M.
ft. Miſtura cujus ſumat Cochl. larg. ij. tertia vel quarta hora.

Vel

℞. Confect. Aromat. ʒj.
Aq. Cinnam. ʒv.
Spirit. Pimento. ʒj.
Tinct. Kino ʒij. M.
ft. Miſtura. Adde pro re nata
Tinct. Opii gutt. xxxv.

Vel

℞. Confect. Opiatæ gr. x.
Aq. Cinnam. ʒjss.
Tinct. Catechu. ʒjfs. M.
ft. Hauſtus quarta quaque hora ſumendus.

Vel

℞. Extract. Lign. Campech. gr. xv.
Aq. Pimento ʒjfs.
Tinct. Kino ʒj.
Syr. Zingib. ʒij. M.
ft. Hauſtus.

‡ ℞. Cort. Simaroubæ Contus.
—— Caſcarill. āā ʒfs. Coque ex
Aq. Bullient. ℔j. ad ʒviij.
Colat. adde
Spirit. Cinnam. ʒij.
Tinct. Opii gutt. xxx. M.
Capiat Cochl. larg. iij. quarta quaque hora.

Vel

℞. Infus. Cort. Anguſtur. ʒvj.
Tinct. Columbæ ʒj.
—— Catechu ʒij.
—— Lavend. C. ʒfs.

Vel

℞. Decoct. Cort. Peruv. ʒjfs.
Tinct. Columb. ʒij.
—— Cort. Aurant. ʒj.
—— Kino gutt. xxx. M.
ft. Hauſtus ter quaterve die ſumendus.

Vel

℞. Infus. Cort. Peruv. ʒjfs.
Tinct. Ejusd. C. ʒij.
Acid. Sulph. Dil. gutt. xv.
Tinct. Opii gutt. x. M.
ft. Hauſtus.

Vel

larly to the lower parts of it by means of cloths, or sponges; or the immersion of the lower part of the trunk in a tub of water, may probably prove a good auxiliary mean.

The fever accompanying this disease sometimes appears under an intermittent form, and is protracted much longer than it otherwise would have been in consequence of its being so complicated. In such cases, its treatment is to be regulated as directed under that head by a use of Peruvian bark, &c.

In the first stage of the disease, a use of ripe fruits will be proper: but in a more advanced period, where any morbid acidity seems to prevail in the stomach, they should not be recommended.

Every sort of food which readily tends to putrefaction ought carefully to be avoided throughout the whole course of the disorder, as also all kinds of fermented and spirituous liquors; supporting the patient's strength with preparations of barley, rice, sago, flour, panado, Indian arrow-root, and gelatinous broths. During the state of convalescence, Port wine or Madeira, or even a moderate quantity of brandy, properly diluted with water, may be allowed.

Persons recovering from a dysentery should observe the greatest caution and regularity in their mode of living, and they should go warmly clothed, as the disease is very liable to relapses.

The importance of warm clothing, both in the prevention and cure of bowel complaints, is too obvious to require my saying much on the subject: I will therefore only observe, that warmth ought not to be a secondary object; on the contrary, it ought to be the first; for if a patient only wears his ordinary clothing, he will receive comparatively little benefit from any medicine. A waistcoat of flannel or fleecy hosiery next to the skin ought always to be worn, as likewise sliders of the same, and these should be laid aside with caution, and by slow degrees. The writer* of a small tract on dysentery lays much stress on swathing the abdomen with flannel bandages, as being the best mode of confining a certain degree of heat over that part of the body which is the seat of the disease.

Dysentery being of a very contagious nature, every precaution should be taken, particularly in situations where many people are crowded together (as in camps, and on board of ships) to prevent the disease from spreading. The sick ought immediately to be separated from those in health, or who labour under any other disorder; they should be lodged,

* See H. Dewar's Observations on Diarrhœa and Dysentery, as those Diseases appeared in the British Army during the Campaign in Egypt in 1801.

Vel

℞ Extract. Gentian.
——— Lign. Camp. āā ʒjſs.
Ferri Vitriolat.
Gum. Myrrh. āā ʒj.
Syrup. Zingib. q. s. / M.
Fiant Pilulæ lx. quarum ſumat iij. ter die cum
Decoct. Simaroub. ℥ij.

if possible, in distinct rooms, or tents, and the strictest attention should be paid to cleanliness, taking care to remove the stools as soon as voided, and to have them quickly buried; to ventilate the chamber sufficiently, and sprinkle it now and then with a little warm vinegar; and to change the linen both of the body and beds frequently. In addition to these means the fumigations advised under the head of Typhus Gravior may be resorted to.

For the destruction of contagion of every species, where a number of persons are collected together, Dr. Rollo,* in addition to free ventilation and cleanliness, recommends the following as being an easy, safe, and very effectual method, and which is pursued at the Royal Artillery Hospital:

Take of pulverized manganese, two parts; common salt, four parts; sulphuric acid, three parts; water, one part. A suitable proportion of this mixture is to be put into an earthen vessel, and suffered to remain until no vapours arise from it, or its peculiar smell is not perceptible. He mentions, that when a patient is admitted with an infectious disease, one or two gallipots are placed in the wards with about three ounces of the manganese and salt, to which is added half an ounce of water, and then is gradually poured on the whole a part of the ounce of sulphuric acid, the remainder occasionally.

These quantities are according to the proportions previously stated, and they answer the consumption of a day. A pot or two is placed, we are informed by the Doctor, on the outside of the doors of the same wards in the gallery. The vapour is diffused over the whole ward, penetrates every where, and destroys every other smell than what itself conveys. Even the contagion of the small-pox has been noticed to be destroyed by this vapour, and of course it is likely to prove destructive of other contagions. In the manner here described, it can be used with due effect, and without the least prejudice to the sick.

Its application, besides annihilating contagion, may also prevent its formation; and its use is recommended by Dr. Rollo in all situations where a number of persons in health are confined together, as on board of transports, especially in bad weather. Two or three gallipots, with the quantities before mentioned, he says, would be sufficient, and it would not be necessary to use them oftener than twice or thrice a week.

It has been recommended to make trial of the remedy in marshy situations, where there may be an unavoidable exposure: in these places, the gallipots with the materials should be placed in the inside of the windows and doors of the habitations next to the marshes.

* See his Account of the Royal Artillery Hospital at Woolwich.

CLASS II.

NEUROSES OR NERVOUS DISEASES.

THE character assigned to this class of diseases is, preternatural affection of sense and motion, without idiopathic or primary pyrexia, and without local disease.

ORDER I.

COMATA.

DIMINUTION of voluntary motion, with sleep or a suspension of sense, is the character of this order of diseases.

OF APOPLEXY, OR APOPLEXIA.

THIS disease consists in a sudden diminution of all the senses external and internal, and of all voluntary motion, while, at the same time, the heart and lungs continue to perform their action. In some cases it may be difficult to distinguish it from intoxication, and which can only be done by the smell, the appearance of the face, and the duration of the fit, which in the latter seldom exceeds ten or twelve hours. The state of the pulse, difficult respiration, stertorous breathing, profound sleep, and the affection of all the powers of volition, will distinguish apoplexy from palsy: the stertor, sopor, diminution of the power of volition, and the absence of convulsions, will distinguish it from epilepsy.

It makes its attack chiefly at an advanced period of life, and most usually on those who are of a corpulent habit, with a short neck and large head, and who lead an inactive life, make use of a full diet, or drink to excess.

The immediate cause of apoplexy is most generally a compression on the brain, produced either by an accumulation of blood in the vessels of the head, and distending them to such a degree as to compress the medullary portion of the brain; or by an effusion of blood from the red vessels, or of serum from the exhalants, which fluids are accumulated in such a quantity as to occasion compression; but it takes place sometimes without extravasation, exudation, or effusion being the consequence, as in many instances we see patients recovering quickly from a fit of apoplexy without any paralytic affection being left behind, which could not happen if either of these had existed.

When the disease arises from an accumulation of blood in the vessels of the head, or by an effusion of blood from the red vessels, it is called

sanguineous apoplexy, and when occasioned by serum from the exhalants, it is known by the name of serous apoplexy.

The states of over-distention and effusion may be brought on by whatever increases the afflux and impetus of the blood in the arteries of the head; such as violent fits of passion, great exertions of muscular strength, severe exercise, excess in venery, stooping down for any length of time, wearing any thing too tight about the neck, overloading the stomach, long exposure to intense cold or a vertical sun, the sudden suppression of any long-accustomed evacuation, the application of the fumes of certain narcotic and metallic substances, such as opium, alcohol, mercury, &c.; and by blows, wounds, and other external injuries. In short, apoplexy may be occasioned by whatever fills, distends, obstructs, ruptures, lacerates, corrodes, or compresses the vessels of the brain and its meninges too much, and thereby urges, retards, or entirely impedes the flow of blood through the same; or in any manner destroys the intimate fabric and structure of the brain.

A loss of vitality in the brain has been assigned as a cause of apoplexy in those cases where neither extravasation, exudation, nor effusion, are to be discovered on dissection.

The circumstances disposing to sanguineous apoplexy are a full and luxurious mode of living, with but little exercise, a sanguine temperament, a full habit, middle age, short neck, suppressed evacuations, and warm weather. Those which dispose to serous apoplexy are a phlegmatic temperament, cachectic habit of body, and old age.

Sanguineous apoplexy is sometimes preceded by giddiness, dimness of sight, drowsiness, loss of memory, or faltering of the tongue in speaking; but it more usually happens, that, without much previous indisposition, the person falls down suddenly, the face is red, and appears puffed up, the veins of the head, particularly the eyes, temples, and neck, seem turgid, the head feels hot, the eyelids are half open and rigid, the eyes are prominent and fixed, the breathing is difficult and stertorous, and for the most part the pulse is full and strong. In a few instances, a grinding of the teeth, with slight convulsive motions, is observable. When the disease continues for any length of time, the pulse becomes languid, weak, and slow, and the breathing is shortened, until at length it ceases altogether.

In serous apoplexy the attack is more gradual in general, the face is pale and tumid, the veins are depressed, the pulse is small, weak, irregular, and intermittent, respiration is impeded and stertorous, and the extremities are cold and flaccid. Sometimes these appearances are preceded by vertigo, torpor, and an impediment in the speech, together with a failure of memory.

Although the whole body is affected with the loss of sense and motion in apoplexy, it takes place nevertheless very often more upon one side than the other, which is called a hemiplegia, and in this case the side least affected with palsy is somewhat convulsed.

In forming our opinion as to the event, we must be guided by the violence of the symptoms. If the fit is of long duration, the respi-

ration laborious and stertorous, and the person much advanced in years, the disease in all probability will terminate fatally. In some cases it goes off entirely, either by diarrhœa, hemorrhage, return of the hæmorrhoidal or any other habitual discharge, and sometimes by the appearance of fever, but more frequently it leaves a state of mental imbecility behind it, or terminates in a hemiplegia, or in death. Even when a person recovers from an attack of this disorder, it is very apt to return after a short period of time, and in the end to prove fatal.

Where there is extravasation, the patient's recovery will be slow and difficult; for the power of absorption cannot be equal to its being immediately taken up. When the person's recovery is immediate, it is a presumptive evidence that there has been neither extravasation, effusion, nor exudation, but that the compression arose from a repletion in the vessels of the brain.

In the dissections of those who have died of apoplexy, blood is often found effused on the surface and in the cavities of the brain; and in other instances, a turgidness and distention of its blood-vessels are to be observed. In some cases, tumours have been found attached to different parts of the substance of the brain, and in others no traces of any real affection of it could be discerned.

In the cure of sanguineous apoplexy, no time should be lost in employing powerful remedies. On the person's being seized, due care must be taken to remove all compression from about the neck, to support him in as erect a position as possible, and to allow a free admission of cool air. These steps being adopted, twelve or fourteen ounces of blood should be taken away, and if it can be drawn from the jugular veins instead of the arm, it will be the more likely to be attended with a good effect. When any branch of the temporal artery seems so turgid as to admit of being easily opened, drawing blood from thence may probably prove a still more effectual way of unloading the vessels of the brain.

In those cases where one side of the body is perceived to be more affected with loss of motion than the other, the bleeding should be made, if possible, on the opposite side to that affected, as dissections shew that the congestions producing apoplexy are always on the side which is not affected.

After general bleeding, leeches may be applied to the temples, or the scarificator and cupping-glass to the occiput; and when sufficient evacuations have been procured by these means, we may then apply a large blister to the head or neck, and small ones to the extremities, together with cataplasms to the soles of the feet.

If the power of swallowing remains, some active purgative * should be given by the mouth in divided portions, and at proper intervals,

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* ℞. Infus. Sennæ ℥iv.
Kal. Tartarisat. ʒvj.
Tinct. Jalapii ʒij.
Syrup. e Spin. Cerv. ℥iij. M.
Capiat dimidium pro dos.

so as not to excite any vomiting; but if not, the contents of the intestines are to be dislodged by a strong clyster,* which is to be repeated every three or four hours, until a sufficient effect is procured.

Emetics are made use of by some practitioners. Where the disease has been brought on by a large indigested meal distending the stomach, pressing upon the aorta descendens, obstructing the free expansion of the lungs, and thus crowding the arteries of the head with more blood than ought to be there, the exhibition of an emetic may be admissible and proper, provided it has been preceded by copious venesection; or should vomiting arise naturally, the stomach may be relieved by washing it out with a little chamomile-tea; but where the disease is occasioned by an extravasation either of blood or serum on the brain, more particularly the former, it cannot be denied, I think, that an emetic would be a very hazardous remedy. A supposed case of apoplexy which fell under the care of Dr. Langslow, of Halesworth, and Mr. Crowfoot, of Beccles, gave rise to much controversy with respect to the propriety of administering emetics in this disease. Those who wish to peruse the arguments which have been brought forward on the occasion by these gentlemen, as well as by many other practitioners, will find the subject amply discussed in the sixth and seventh volumes of the Medical and Physical Journal.

When the fit goes off we may advise some of the cephalic and nervous medicines recommended under the head of Palsy; and in order to obviate any costiveness that may happen to arise, a little tincture of rhubarb may be taken occasionally.

In serous apoplexy, blood-letting should either be omitted entirely, or be sparingly used. To promote an absorption of the effused serum, it will be proper to have recourse to warm purgatives, sternutatories,† and a free application of blisters to the head, back, and extremities, and of sinapisms to the soles of the feet. Emetics in this species of apoplexy, as well as the former, seem of doubtful effect.

Stimulants of various kinds, such as volatile salts, cephalic elixirs and cordials, have been much employed in serous apoplexy; but as they determine the circulation to the head, their use appears not altogether advisable. When they are employed, sufficient evacuations should always precede their use.

Out of a fit of serous apoplexy, the cephalic and nervous medicines, advised under the head of Palsy, will be proper, taking some stomachic purgative now and then.

When apoplectic symptoms proceed from opium, or any other nar-

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Vel

℞. Gum. Gambog. gr. iij.
Terito bene cum
Tinct. Sennæ C. ℥j.
——— Jalapii ʒj. M.
ft. Hauſtus.

Vel

℞. Calomelanos gr. vj.
Extract. Colocynth. C. gr x. M.
Fiant Pilulæ iij. pro dos.

* ℞. Fol. Sennæ ℥iij.
Aq. Fontan. ℔j. Coque leniter ad ℔fs.
Colat. adde
Magnes. Vitriolat. ℥j.
Ol. Ricini ℥jfs. M.
ft. Enema.

† Pulv. Aſari Compos.

cotic poison taken into the stomach, the offending matter ought to be got rid of as soon as possible, by exciting vomiting, with tartarised antimony or vitriolated zinc, should none have arisen spontaneously. Having procured its discharge, we are to have recourse to bleeding, and the exhibition of acrid clysters, with the view of relieving the congestion in the brain and lungs, together with the other means recommended under the head of Vegetable Poisons.

Although stimulants are improper in apoplexy arising from other causes, still they may be employed with great safety and utility in those cases where it proceeds from any narcotic poison taken into the stomach, or otherwise applied to the body; but here too, proper evacuations should be premised. The external stimulants in general use, are volatile spirits applied to the nose and temples, rubefacient ointments to the breast and back, blisters, sinapisms with horse-radish, and warm fomentations to the extremities, together with frictions with flannels or a flesh-brush, impregnated with flour of mustard, and throwing cold water over several parts of the body, which in general proves one of the most effectual means of rousing apoplectics of this kind, particularly if the person is first carried out into the open air. The internal stimulants to be employed, are the volatile alkaline salts or spirits, white mustard-seed, horse-radish, white scurvy-grass, and various aromatics, such as rosemary, lavender, &c. used in substance, tincture, or in their essential oils.

If the disease arises in consequence of the suppression of piles, leeches should be applied to the hæmorrhoidal veins, fomentations must be employed, and the intestines be stimulated by means of aloetic purges.

Those who from a plethoric state of the blood-vessels of the head are predisposed to an attack of apoplexy, will act prudently in confining themselves to a very spare diet, carefully abstaining from strong liquors, from all high-seasoned food, and from meat suppers. A limitation of the use of fluids in habits predisposed to plethora and apoplexy will likewise be worthy of attention. Dr. Mossman tells us * he is taught by long observation and experience to expect effects highly beneficial from the adoption of this plan; for he constantly noticed the phenomena of plethora and obesity are referable, not to the taking in of *solid*, but of *liquid* nutriment. Persons predisposed to apoplexy should likewise be careful to keep their body open by some gentle laxative taken occasionally, and such moderate exercise ought to be used, as will support the perspiration without hurrying respiration, or exciting heat. Nothing tight should be worn round the neck; and when in bed, the head ought to be supported of a proper height. The feet should be kept warm and dry, and the extremes of heat and cold must be avoided. Nothing has a better effect in preventing apoplexy in those who are predisposed to its attacks, than a perpetual issue between the shoulders, or a seton in the neck; but great care must be taken not to allow them to dry up without opening some other drain in their stead.

* See Med. and Phys. Journal, vol. ix. p. 412.

When an attack of apoplexy is immediately threatened, blood-letting is the remedy most to be relied on, and the blood should be drawn either from the jugular vein or temporal artery, as before advised. Under doubtful circumstances, where the symptoms are not very urgent, the application of leeches to the temples, or scarifications with cupping, at the back of the head, may prove amply sufficient.

The coup de soleil, or stroke of the sun, which so frequently occurs in warm climates to those who are long exposed under its immediate influence, seems evidently to be an attack of apoplexy, and is to be treated in the same manner as pointed out in the preceding pages. The application of linen cloths wetted in cold vinegar and water to the temples, may likewise be tried.

It may not be improper to remark here, that as the vital principle frequently remains in a latent state for some time, and as we are yet unacquainted with any certain criterion between positive and apparent death besides that of putrefaction, some appearances of incipient decomposition should therefore be allowed to take place, in every case of sudden decease, before interment. In warm countries, where it is customary to bury the body within four-and-twenty hours, I have great reason to fear that premature interment sometimes happens.

Of the PALSY, PARALYSIS, or HEMIPLEGIA.

PALSY is a diminution or total loss of the powers of motion and sensibility in certain parts of the body, often attended with drowsiness. In some instances, the disease is confined to a particular part; but it more usually happens, that one entire side of the body from the head downwards is affected, which is known by the name of hemiplegia.

If the power of motion and sense of feeling in the lower half of the body be impaired, the complaint is denominated paraplegia.

Palsy may arise in consequence of an attack of apoplexy, and, like it, may be occasioned by any thing that prevents the flow of the nervous power from the brain, into the organs of motion; hence tumours, over-distention and effusion, distortions of the spine, and a thickening of the ligaments that connect the vertebræ together, often give rise to it. It may also be occasioned by translations of morbid matter to the head, by the suppression of usual evacuations, and by pressure made on the nerves by luxations, fractures, wounds, or other external injuries. The long-continued application of sedatives will likewise produce palsy, as we find those whose occupations subject them to the constant handling of white lead, and those who are much exposed to the poisonous fumes of metals or minerals, are very apt to be attacked with it. Whatever tends to relax and enervate the system, may likewise prove an occasional cause of this disease: hence those who lead sedentary or luxurious lives; those who are guilty of frequent irregularities or great debaucheries; those who are engaged in intense studies during the night, or labour under great distress or anxiety, are very subject to this malady.

All its varieties more generally appear in the aged and infirm than in the young and robust. The left side is more frequently affected than the right.

Palsy usually comes on with a sudden and immediate loss of the motion and sensibility of the parts; but in a few instances it is preceded by a numbness, coldness, and paleness, and sometimes by slight convulsive twitches. When the head is much affected, the eye and mouth are drawn on one side, the memory and judgment are much impaired, and the speech is indistinct and incoherent. If the disease affects the extremities, and has been of long duration, it not only produces a loss of motion and sensibility, but likewise a considerable flaccidity and wasting away in the muscles of the parts affected.

It has been mentioned that a curvature of the spine, owing to one or more of the vertebræ being displaced, sometimes induces paralytic affections of the lower extremities, from the pressure that they make upon the nerves of those parts, and that sometimes the disease appears to arise solely from a thickening of the ligaments that connect the vertebræ together, without any particular affection of the bones. When one of the vertebræ only is diseased, it is observed that the patient is more completely deprived of the power of his limbs than when two or more of them are displaced, owing, as Mr. Bell* thinks, to the angle being more acute, and consequently the pressure on the medulla spinalis greater, when one bone only is thrown out of the range. This also accounts for the paralytic symptoms in some being less remarkable in the more advanced stages of the disease than they were at first; for although one bone only is displaced at first, yet one or both of the contiguous vertebræ almost constantly yield at last; and the difference arising from this is so great, that patients almost always linger and die in the course of a year or two, often in less time, when one bone only is deranged; while they live for a great length of time, frequently as long as if no such circumstance had occurred, when the curvature of the spine becomes more extensive.

Paralytic affections from distortions occur in all ages; but more frequently about puberty than at any other period, and more commonly in girls than in boys. In general, the effects that result from them are observed before the cause is suspected, for there is seldom much pain in the part immediately affected. When distortion of the spine occurs during infancy, the patient appears to be suddenly deprived of the use of his limbs; but at more advanced periods, he complains first of feebleness and languor, and of numbness or want of feeling in the under extremities. By degrees this want of sensibility is found to increase, and he is often observed to stumble and to drag his legs, instead of lifting them properly; nor can he stand erect for any length of time without much difficulty. At last he loses the use of his legs entirely, which become altogether paralytic; and when the spine is distorted much forward, so as to compress the thoracic and abdominal viscera, he becomes distressed with dyspnœa, or with complaints in

* See his System of Surgery, vol. vii. p. 218.

the stomach and bowels, according to the part of the spine that is diseased.

Palsy is to be distinguished from apoplexy by the pulse, which in the former disease is soft and slow, and likewise by the other symptoms.

When palsy attacks any vital part, such as the brain, heart, or lungs, it soon terminates fatally. When it arises as a consequence of apoplexy, it generally proves very difficult of cure. Paralytic affections of the lower extremities ensuing from any injury done to the spinal marrow, by blows and other accidents, usually prove incurable. Palsy, although a dangerous disease in every instance, particularly at an advanced period of life, is sometimes removed by the occurrence of a diarrhœa, or fever. A feeling of warmth, and a slight pricking pain, or sensation as if stung by ants in the parts affected, are favourable symptoms.

The morbid appearances to be observed on dissections in palsy, are pretty similar to those which are to be met with in apoplexy: hence collections of blood, and of serous fluids, are often found effused on the brain, but more frequently the latter, and in some instances the substance of this organ seems to have suffered an alteration. In palsy, as well as in apoplexy, the collection of extravasated fluid is generally on the opposite side of the brain to that which is affected.

When this disease arises in a young person of a full plethoric habit, comes on suddenly, and the head appears to be much affected, or seems to arise from the causes producing apoplexy, it will be advisable to take away some blood, by opening the jugular vein or temporal artery; after which, it will be proper to give an active purgative, as advised under the head of Apoplexy; but in old age, or where palsy arises in a debilitated constitution, neither bleeding nor purging should be resorted to. Where costiveness prevails in such habits, it may be obviated by some stomachic laxative, such as the tinctura rhabarbari composita.

In all cases, but more particularly where the disease has arisen in aged or decrepit persons, the external application of stimulants will be highly proper; wherefore the parts affected, as well as all along the spine, may be rubbed several times a day with flannels or a flesh-brush impregnated with flour or essence of mustard, or else with the palms of the hand, and some kind of rubefacient liniment;* and in addition to these remedies, we may recommend the application of blisters, sinapisms,† and warm fomentations.

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* ℞. Ol. Olivæ ℥ij.
— Terebinth. ℥j. M.
ft. Linimentum.

Vel

℞. Ol. Camphorat. ℥j.
Tinct. Cantharid. ℥ij.
Aq. Ammon. Pur. ℥ss. M.

Vel

℞. Spirit. Camphorat. ℥ij.
Aq. Ammon Pur. ℥iij.
Effent. Ol. Berg. gutt. x. M.

Vel

℞. Ol. Olivæ ℥iij.
Aq. Ammon. Pur. ℥j.
Tinct. Cantharid. ℥j. M.

† ℞. Semin. Sinap. Pulv.
Rad. Raphan. Contus ää ℥j.
Micæ Panis ℥ij.
Acet. Acerrim. q. s. M.
ft. Cataplasma plantis pedum applicandum.

As a gentle stimulus to parts affected by paralysis, urtication may sometimes be used.

Warm bathing is a remedy which has been much employed in most cases of palsy, as an external stimulant. In those, however, which arise in sanguineous habits, from a congestion of blood in the vessels of the brain, its use would in all probability prove injurious, both by stimulating the solids and rarefying the fluids, and thereby becoming a stimulus to the sanguiferous system; but in those cases where palsy has arisen in consequence of the application of narcotic powers, diminished vital heat, or an enfeebled constitution, the use of warm bathing will be likely to prove highly beneficial. In palsy, we ought therefore most cautiously to ascertain whether an increased or diminished degree of vital heat or action in the sanguiferous vessels, is the cause of the disease. Whether the natural baths, such as those of Bath in Somersetshire, &c. possess more efficacious qualities than the ordinary warm ones, seems a matter of doubt with many practitioners, as the substances with which the former are impregnated, are but trifling in point of quantity. In my opinion, they are entitled to a decided preference.

When a natural warm bath cannot be resorted to, an artificial one may be substituted; and this may be made by dissolving a proper quantity of the ferrum vitriolatum in the water, and impregnating it with fixed air.

Electricity, both sparks and shocks, is another remedy which is universally employed in the cure of the palsy as an external stimulant, and often with the most happy effect; but in using it, proper care should be taken to apply it only with a moderate force, as more is to be expected from its repetition than from employing it with violence, and likewise to confine its application to parts which are somewhat remote from the head, as in those cases which depend upon a compression of the brain, it might do injury, by acting on the vessels of this organ.

Galvanism is also a remedy from which advantages might probably be derived. Indeed some practitioners have gone so far as to declare, that they have experienced its effects in palsy to be superior to electricity. Dr. Bardsley tells us,* he has found it to succeed, when the latter has failed.

When the disease affects several different parts of the body, as in hemiplegia, we should use stimulants internally as well as externally. Those in most general use are mustard-seed, horse-radish, garlic, and volatile alkaline salts, or spirits, which may be taken agreeably to the prescriptions advised below.† The arnica montana is a remedy much recommended.

* See his Medical Reports and Cases, p. 183.

† ℞. Sem. Sinap. Alb. ℥j.
Capiat æger Cochl. min. ij. ex
Aq. Frigid. Cyatho bis terve die.
Vel
℞. Rad.

Resinous substances, such as guaiacum and the turpentines, have sometimes been employed with advantage in palsy; but from being apt to prove too inflammatory, their use is by no means general in this disease.

When palsy has arisen in consequence of the system being enervated by any debilitating cause, besides applying stimulants externally, and likewise administering them internally, we should make use of tonics joined with aromatics, as advised under the head of Dyspepsia.

The arsenical solution is a remedy which promises some benefit in this disease, particularly when confined to particular parts.

In that palsy of the lower extremities which is occasioned by a deformity of the spine, or which arises from a thickening of the ligaments that connect the vertebræ together, without any particular affection of the bones, no mode of treatment has proved so successful as the insertion of issues. The late Mr. Pott, to whom we are much indebted for his observations on this subject, speaks highly of the effects of drains placed as near as possible to the tumour. He recommends an issue to be opened with caustic on each side of the swelling, large enough to admit of a kidney-bean, and the bottom of the sore to be sprinkled from time to time with powder of cantharides.

My advice was some time ago requested on the case of a young lady about seventeen years of age, who had gradually lost all sense of feeling as well as motion in her lower extremities. The disease had then been of two years standing; she had consulted two or three practitioners, and had gone through a course of the usual medicines, together with blistering and other stimulating external applications, and she had made trial both of warm and cold bathing; but all without avail. Independent of the paralytic affection in the lower extremities, she seemed to suffer no inconvenience; her countenance was healthy, and her appetite

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℞. Rad. Raphan. Contus. ℥ij.
Sem. Sinap. Alb.
Rad. Valer. Sylv. āā ℥ſs.
Rhabarb. Incis. ʒiij.
Infund. in Vin. Alb. Hbij. Sæpe agitetur et coletur usus tempore Cochl. larg. iv. quarta hora sumenda.

Vel

℞. Sem. Sinap. Alb. Contus.
Rad. Raphan. Incis. āā ℥ij.
Cort. Aurant. ℥ſs.
Aq. Fontan. Hbij.
Coque ad Hbj. Fiat Decoctum cujus sumat Cyath. j. amplum ter in die.

Vel

℞. Spirit. Ammon. Comp. ℥j.
Guttæ x.—l. pro dos. sumendæ.

Vel

℞. Tinct. Lav. Comp. ℥ij.
Spirit. Ammon. Fœtid. ℥ſs. M.
Capiat gutt. xx.—xl. frequenter in quovis vehiculo appropriato.

Vel

℞. Ammoniæ Præparat. gr. x.
Camphor. gr. iij.
Conferv. Rof. q. s.
ft. Bolus ter quaterve die fumendus.

Vel

℞. Spirit. Raphan. C. ℥ſs.
——— Ammon. Fœtid. gutt. xxx.
Tinct. Valerian. ℥ij.
Aq. Anethi ℥j. M.
ft. Hauſtus.

Vel

℞. Ammon. Præparat. gr. vj.
Tinct. Cardam. Comp. ℥ij.
Aq. Menth. Sativ. ℥jſs. M.
ft. Hauſtus 6ta hora capiendus.

good; she slept well, and felt no pain. She rode on horseback every day when the weather permitted, and when it did not, she went out in a carriage for the benefit of the air. Upon being informed of the history of the case, I immediately suspected that the disease was occasioned by some injury done to the spine, or that there was a thickening of the ligaments that connect the vertebræ together; and in this supposition I was confirmed by passing my hand down the back, as I soon perceived an evident fulness on one side of the lower extremity of the spine. I ordered issues to be inserted in the manner just advised, and had the satisfaction to see my patient soon recover the feeling in her feet, so as to be sensible when they touched the ground, and at the end of about three months she was capable of walking alone. I have every reason however, to conclude, that the disease was in the ligaments only, and that the bones of the spine were not affected. When the vertebræ are diseased, a complete cure, I am afraid, can seldom be obtained; but the symptoms may certainly be greatly mitigated, and the pressure upon the spinal marrow diminished, by exciting a discharge in the neighbourhood of the parts.

Dr. Clutterbuck informs us, in a pamphlet published not very long ago, that he had found mercury to be an excellent antidote to lead, and that he had used it with the most happy effects in many instances of paralytic affections, which had arisen among those who were employed in manufacturing the several preparations of lead, and in applying them to their respective uses. In confirmation of the success of the remedy, he has recited several cases, which seem clearly to prove its utility; and he has likewise added a letter from Dr. Bradley, physician to the Westminster Hospital, bearing testimony in favour of the use of mercury in such cases.

The paralysis or loss of nervous power in particular limbs, which arises as a consequence of that painful and obstinate colic produced by the poison of lead, is found to be peculiarly relieved by a use of the Bath waters, more especially when applied externally, either generally or upon the part affected.

In the treatment of that species of palsy of the hands which is produced by the poison of lead, the use of an ingenious mechanical contrivance adapted to place the muscles in a favourable state is highly recommended by a late writer,* and it appears also to have been employed by him with much advantage. It is a splint, made somewhat in the form of a battledore, to be fastened under the fore-arm, and continued to the extremities of the fingers. The object of the instrument is to take off the weight appended to the extremities of the muscles, under the idea that this weight is a principal object to the restoration of the muscular power. In the first trial which our author made, the splint was applied to the right arm only, and the result, we are told, was as follows:

In one month from the first application he had the satisfaction to find that the right hand was able to raise an eight-ounce weight into a line

* See Dr. Pemberton's Treatise on the Diseases of the abdominal Viscera.

with the fore-arm by the power of the extensor muscles; whereas at this time the left hand remained as perfectly paralytic as before. In five weeks more, the extensor muscles of the right hand had regained their natural strength, but the left hand continued paralytic.

For the purpose of ascertaining how far this improvement could be conceived to have arisen from any change of the constitution, and not from the local mean which was used, it appears that he discharged the patient from under his care for one month, at the end of which time he returned to him with the left hand still perfectly paralytic, but the right hand enjoying its full and natural powers. The splint was then applied to the left hand, and in seven weeks the power of the extensor muscles of that hand was also perfectly restored.

The result of the experiment certainly places the use of this mechanical contrivance in a favourable light; but it is proper to observe at the same time that it failed in producing the desired effect in some cases of palsy which were not occasioned by the poison of lead.

In palsy the diet should be light, nutritive, and of a warm aromatic nature. If the patient is able to walk, he should take such daily exercise as his strength will admit; but if deprived of the use of his legs, he ought then to be carried abroad in a carriage, or on horseback; and frictions with strong stimulants should frequently be applied to the parts affected. Flannel should be worn next to the skin, and all exposures to cold, damp, and moist air, ought carefully to be avoided. If possible, a warmer climate should be resorted to.

In those cases where the appetite fails, and the person sinks into a state of debility, from the long continuance of the disease, it will be proper to employ the Peruvian bark, stomachic bitters, and other tonics, to strengthen the system, as advised in dyspepsia.

The inhabitants of the East Indies are very subject to a species of palsy which is called Barbiers, but known by the natives under that of Beriberii, a word signifying a sheep. The disease probably has received this denomination, because those who are seized with it, have a tottering of the knees and a peculiar manner of walking, exhibiting to the fancy a representation of the gait of that animal.

It attacks both natives and strangers, especially during the rainy season, commencing in November and terminating in March or April, but is most violent on the Malabar coast. During this season the land winds issue every morning about sun-rise from the neighbouring mountains with remarkable coolness; and such as are tempted by the serenity of the atmosphere to sleep exposed to these winds, are often suddenly seized with the disease.

Among the chief symptoms by which it is characterized, is a lassitude over the whole body. The motion and sensation, especially of the hands and feet, are languid and depraved. Sometimes only a part of the extremities are affected, and at others, the whole of them. The speech is now and then so much obstructed, that the patient can scarcely pronounce a syllable articulately.

The disease seldom proves fatal; but the cure is generally tedious, and notwithstanding a use of the most powerful medicines, is

said* seldom to be effected till after the shifting of the monsoons, unless the patients are removed to the coast of Coromandel, or to any place to the eastward of the Balagat mountains, where, by a change of air, they quickly recover.

The means principally employed by the native practitioners, however, are fomentations and baths made of aromatic herbs, together with strong frictions. The Indians likewise adopt earth-bathing by putting the patient into a hole dug in the ground, and covering him with sand up to his neck. This is performed in the middle of the day, and he remains there as long as he can bear the heat of the sand.

Where the disease is chronical and of long standing, sudorific medicines are proper; and therefore camphor, volatile salts, and gum guaiacum, are frequently given. To obviate costiveness, aloetic purges must be interposed. Due exercise, either on horseback or by walking, will be necessary to restore the action and strength of the extremities, together with warmth, and frictions with rubefacients.

ORDER II.

ADYNAMIÆ.

A DIMINUTION of the involuntary motions, whether vital or natural, is the character of this order.

Of FAINTING, or SYNCOPE.

THIS disease consists in a decreased action, and sometimes total cessation of the pulse and respiration. It is sometimes preceded by anxiety about the præcordia, a sense of fulness ascending from the stomach towards the head, vertigo, or confusion of ideas, dimness of sight, and coldness of the extremities. Attacks of syncope are frequently attended with, or end in vomiting, and sometimes in convulsions, or in an epileptic fit.

The causes of this affection are sudden and violent emotions of the mind, pungent and other kinds of odours, derangement of the primæ viæ, debility from preceding disorders, defect of the stimulus of distention, as after bloodletting, hæmorrhage, or the operation of paracentesis in ascites; organic affection of the heart, or of the parts immediately connected with it, such as aneurism either of the heart itself, or of the arch of the aorta; ossification of the valves of the heart, or its large blood-vessels, or polypi.

During the paroxysm, the nostrils are to be stimulated with volatile spirits or salts, and the face to be sprinkled with cold water. Where the disease arises as the consequence of an hemorrhage, the patient should be placed in a recumbent posture, and in all cases a free admission of pure cool air should be allowed. If the disease arises as the conse-

* See Dr. Lind on the Diseases of warm Climates, p. 286.

quence of debility or excitability, the system should be strengthened by the use of cinchona, sulphuric acid, stomachic bitters, and chalybeates, together with cold bathing. It need hardly be added, that avoiding the occasional causes, and removing them if in our power, is a matter we should always keep in view.

Of a GIDDINESS in the HEAD, or VERTIGO.

VERTIGO proceeds most usually either from too great a fulness of blood in the vessels of the head, or is symptomatic of dyspepsia, hypochondriasis, or hysteria.

The patient is seized on a sudden with a swimming in the head; every thing appears to him to go round, he staggers and is in danger of falling down.

This complaint is attended with no danger, when it arises as a symptom of hysteria, or any other nervous disease; but when it takes place in consequence of an over-fulness of blood in the vessels of the head, and is not timely relieved by proper evacuation, it may terminate in apoplexy or palsy.

Where vertigo prevails as a symptom of some nervous disease, recourse must be had to the medicines and remedies which are most suitable to the removal of the primary affection; but where it is occasioned by an over-distention of the vessels of the head, either general or topical bleeding, together with a frequent use of cooling purgatives, and a spare regimen, ought to be employed. Should the complaint not be removed by these means, scapulary issues will be advisable.

Of INDIGESTION, OR DYSPEPSIA.

THIS disease chiefly arises in persons between thirty and forty years of age, and is principally to be met with in those who devote much time to study, or who lead either a very sedentary or irregular life. A great singularity attendant on it is, that it may, and often does continue a great length of time, without any aggravation or remission of the symptoms. The disease is pretty similar to chronic weakness.

Great grief, and uneasiness of mind, intense study, indolence, profuse evacuations, excess in venery, hard drinking, particularly of spirituous liquors; irregularity of life, too frequent a use of warm diluent liquors, and of tea, tobacco, and opium, and other narcotics, immoderate repletion, and over-distention of the stomach, very frequent rejection of the saliva, or a diminution or interruption of the due secretion of it, a deficiency in the secretion of the bile, pancreatic, or gastric juice, and the being much exposed to moist and cold air, when without exercise, are the causes which usually occasion dyspepsia. The proximate one appears to be atony or debility of the muscular coat of the stomach.

A long train of nervous symptoms generally attend on this disease, such as loss of appetite, nausea, heart-burn, flatulency, acid eructations,

a gnawing in the stomach when empty, a sense of constriction and uneasiness in the throat, with pain in the side, or sternum, so that the patient at times can only lie on his right side; great costiveness, habitual chilliness, paleness of the countenance, languor, unwillingness to move about, lowness of spirits, palpitations, vertigo, and disturbed sleep.

The number of these symptoms varies in different cases: with some being felt only in part; in others being accompanied even with additional ones equally unpleasant, such as severe transient pains in the head and breast, and various affections of the sight, as blindness, double vision, &c.

Dyspepsia never proves fatal, unless when, by a very long continuance, it produces great general debility and weakness, and so passes into some other disease, such as dropsy; but it is at all times very difficult to remove, but more particularly in warm climates.

The morbid appearances to be observed on dissections of this disease, are principally confined to that part of the stomach which is called the pylorus, this being often found either in a contracted, scirrhous, or ulcerated state. In every instance the stomach is perceived to be considerably distended with air.

In the treatment of the disease, three indications must be attended to.

The first is to avoid or remove the remote causes which have been enumerated.

The second is to obviate the symptoms which contribute to continue or aggravate the disease.

The third is to restore the tone of the organ.

To effect the first of these intentions, it must be the business of the physician to point out to the patient the indispensable necessity of renouncing such habits or pursuits as may have tended to give rise to the disease, as the continued application or frequent repetition of these causes may defeat the use of what remedies are employed.

If he leads a fashionable life, it will be necessary for him to forsake the haunts and habits of dissipation; to leave the crowded city, and its alluring amusements, conducted in rooms, where the air he breathes is vitiated and contaminated by the great number of persons collected together; to shun luxurious tables, indolence, and late hours; to retrace the footsteps by which he had deviated from simple nature, and to court the country, pure air, moderate exercise, early rising, simple diet, the society of a few select friends, and pleasing occupations.

To accomplish the second intention of obviating the symptoms which contribute to continue or aggravate the disease, it will be necessary to remove the crudities in the stomach, by giving a gentle emetic. It will also be necessary to correct the morbid acidity in the stomach, by alkalis and absorbents,* as the kali præparatum, soap, aqua calcis, magnesia,

* ℞. Aq. Calcis ℔j.
Capiat æger ℥ij.—℥iv. bis in die.

℞. Magnes.

chalk, &c.; to assuage the pain and flatulency in the stomach and intestines by carminatives,† antispasmodics,‡ and opiates; and, lastly, to obviate costiveness, by a use of such gentle laxatives,§ joined with aromatics, as will promote a ready discharge of the contents of the intestines, without hurrying their action, or increasing the excretions made into their cavity.

An habitual attention to the removal of costiveness by instituting a regular custom of periodically soliciting an evacuation by voluntary and persevering efforts, will powerfully aid the beneficial effects of the other means we employ. The morning is the proper time for the attempt, and the trial should be prosecuted during at least fifteen minutes, if the peristaltic be not earlier excited to adequate motion. Perhaps a week may be unavailingly employed in this endeavour, but the proposed effect will probably be attained within a month; one month has indeed in numerous instances fully established an habitual call to intestinal evacu-

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℞. Magnes. Alb. ʒiij.
Pulv. Rhabarb. ℈ij.
Aq. Fontan. ʒiv.
— Cinnam. ʒj.
Tinct. Lavend. C. ʒfs. M.
ft. Mistura cujus sumat Cochl. ij. ter in die. *Vel*

℞. Cret. Præparat. gr. xv.
Aq Nuc. Mosch. ʒfs.
—— Fontan. ʒj.
Syrup. Zingib. ʒij. M.
ft. Hauſtus bis die sumendus. *Vel*

℞. Magnes. Alb. ℈ij.
Pulv. Rhabarb. gr. x.
—— Nuc. Mosch. gr. iij. M.
ft. Pulvis mane et vespere sumendus.

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† ℞. Mistur. Cretac. ʒjfs.
Spt. Nuc. Mosch. ʒij.
Tinct. Opii gutt. xv. M.
ft. Hauſtus mane et vesp. capiendus. *Vel*

℞. Cret. Præparat. gr. xij.
Aq. Menth. Pip. ℥fs.
—— Font. ʒj.
Spirit. Pimento ʒij.
Tinct. Opii gutt. xij. M.
ft. Hauſtus ter die sumendus. *Vel*

℞. Sacchar. Alb. ℥fs.
Ol. Anisi gutt. xv.
Aq. Fontan. ʒiv.
Spirit. Carui ʒj.
—— Lav. C. ʒj. M.
ft. Mistura cujus sumat Cochl. ij. ter quaterve die.

‡ ℞. Aq. Anethi ʒiij.
Spirit. Cinnam. ʒj.
Tinct. Valerian. Vol. ʒij.
—— Opii gutt. xx.
Æther. Sulphuric. ʒfs. M.
Capiat Cochl. larga ij. bis terve in die.

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§ ℞. Pil. ex Aloe cum Myrrh. gr. xv. in Pilulas iij. pro dos. divid. *Vel*

℞. Aloes Socot.
Pulv. Rhabarb. āā ʒj.
—— Aromat. ℈j.
Sapon. Venet. ʒfs.
Syrup. q. s. M.
fiat Mass. in Pilulas L. dividenda. quarum sumat ij. vel iij. pro dos. *Vel*

℞. Elect. e Senna ʒij.
Pulv. Jalapii ʒij.
—— Aromat. ℈j.
Cryst. Tart. Pulv. ʒj.
Syrup. Zingib. q. s. M.
ft. Electuarium cujus capiat quantitatem juglandis hora somni. *Vel*

℞. Ol. Ricin. ʒvj. pro dos. *Vel*

℞. Tinct. Rhabarb ʒvj. pro dos. *Vel*

℞. Pulv. Rhabarb. ʒfs.
—— Zingib. gr. v.
Sal Polychrest. ℈j. M.
ft. Pulvis pro re nata sumendus.

ation, under circumstances that previously required the almost daily use of aperient medicines.

For the removal of cardialgia and vomiting which attend on dyspepsia, the application of a blister over the stomach often proves serviceable. In such cases, blisters invigorate the exertions of the arterial and lymphatic vessels of the skin, produce an increase of insensible perspiration and of cutaneous absorption, and increase the action of the stomach, and consequently its power of digestion.

To accomplish the third intention of restoring the tone of the stomach, the loss of which is to be considered as the chief and immediate cause of dyspepsia, we are to employ such medicines as operate directly on this organ, and such remedies, and other means, as have a tendency to strengthen the system in general.

The medicines best calculated to restore the tone of the stomach, are aromatics and astringents combined with bitters,* as likewise the Peruvian bark,† the mineral acids, and chalybeates.‡

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* ℞. Infus. Gentian C. ℥jſs.
Tinct. Card. C. ℥iij.
——— Myrrh. ℥j. M.
ft. Hauſtus.

Vel

℞. Quassiæ ℥ij.
Aq. Fervent. ℥v.
Colat. adde
Tinct. Columb.
——— Card. C. āā ℥ſs. M.
Capiat Cochl. iij ter in die.

Vel

℞. Infus. Gentian. C. ℥v.
Tinct. Cinnam. C. ℥j. M.

Vel

℞. Rad. Gentian. C. ℥iij.
—— Calam. Aromat. C.
—— Columbæ C.
Cort. Aurant. Sic C. āā ℥ij.
Vin. Alb. Hispan. ℔ij.
Hujus Infus. capiat Cochl. iij. ter in die.

† ℞. Decoct. Cort. Peruv. ℥jſs.
Tinct. Columb. ℥ij.
——— Myrrh. ℥j. M.
ft. Hauſtus ter in die sumendus.

Vel

℞. Pulv. Cort. Peruv. ℥j.
Aq. Cinnam. ℥jſs.
Acid. Sulph. Dilut. gutt. xx. M.
ft. Hauſtus.

Vel

℞. Infus. Cort. Peruv. ℥v.
Tinct. Ejusd. C.
——— Card. C. āā ℥vj. M.
Sumat Cochl. iij. ter in die.
Adde pro re nata
Acid. Sulph. Dilut. gutt. xx.

‡ ℞. Tinct. Ferri Muriat. ℥ſs.
Guttæ x.—xx ter die sumendæ in quovis vehiculo.

Vel

Aq. Chalybeatæ.

Vel

℞. Vin. Ferri ℥ſs.
Infus. Gentian. ℥j.
Tinct. Columb. ℥ij. M.
ft. Hauſtus.

Vel

℞. Pulv. Myrrh. ℥ſs.
Spirit. Cinnam. ℥ſs.
Ferri Vitriolat. gr. iij.—vj.
Kal. Præparat. gr. x.
Aq. Pimento ℥j. M.
ft. Hauſtus ter die sumendus.

Vel

℞. Extract. Cort. Peruv.
——— Gentian. āā ℥j.
Ferri Vitriolat. ℥ſs.
Pulv. Myrrh. ℥j.
Ol. Carui gutt. x.
Syrup. Zingib. q. s. M.
fiant Pilulæ lx. quarum sumat iij. bis terve die cum Infus. Gent. Comp. ℥ij.

Vel

℞. Pulv. C. Peruv. ℥j.
—— Myrrh. ℥ij.
——Cascarill. ℥j.
Rubig. Ferri ℥ij.
Syrup. Cort Aurant. q. s. M.
ft. Electuarium, cujus sumat quantitatem juglandis ter in die cum Infus. Quassiæ ℥ij.

Besides the vegetable bitters that we have long been accustomed to, two others have very lately been recommended and brought forward, as deserving our notice. The one is the humulus lupulus, or common hop, different preparations of which, such as the powder, extract, and tincture, are to be procured at the shops of many druggists; the other is the radix rhataniæ, or rhatany root. This last, we are told, by Dr. Reece,* who seems to have been the first to give it notoriety, has been found to invigorate the digestive organs, produce a relish for food and promote digestion. He further mentions, that it is more grateful to the palate than Peruvian bark, and that he has found it to succeed better. This has not, however, been the case in the trials which I have made of it; neither has it answered the expectations of most others who have administered it. An aromatic tincture † of it seems to be its best preparation.

Chalybeates, in particular, are of eminent service in an impaired or capricious appetite, and weakness of the assimilating organs, irregular digestion, flatulent distention of the abdomen, anxiety about the præcordia, difficult respiration from sympathy with the stomach, and occasional vomiting of viscid mucus.

In cardialgia, gastrodynia, pyrosis, and such other complaints of the stomach, the oxyd of bismuth is a remedy which has been employed with considerable advantage in a variety of instances.‡ The proper dose is from three to ten grains, with about twenty-five grains of gum tragacanth, repeated three times a day. It will be best, however, to begin with a dose of only three grains, increasing it gradually. The remedy is said to be perfectly safe, as well as useful.

As a diminution of the due quantity of gastric juice is sometimes a cause of dyspepsia, it may not be improbable, that in such cases the symptom may be relieved by supplying the patient with the gastric liquor of those animals whose food is most similar to that of man. Dr. Scott, in a thesis published some years ago, makes mention, that an Italian physician, finding every thing else fail in a dyspeptic case, had recourse to the gastric liquor of brutes, which proved completely successful.

To strengthen the system, whereby the powers of the stomach will be made stronger, the patient should take daily exercise on horseback, which will be preferable to walking, as being less fatiguing; he should breathe a pure, dry, and temperate air, rise early every morning, go soon to bed at night, lead a temperate life, partake of food of a light nutri-

* See his Treatise on the Radix Rhataniæ.
‡ See Memoirs of the London Medical Society, vol. v.
—— Medical Reports, by Dr. Bardsley.

† ℞. Rad. Rhatan. Contus. ℥iij.
Cort. Aurant. Sic. C. ℥fs.
—— Canel. Alb. C. ℥jfs.
Spirit. Vinos. Ten. ℔ij.
Digere per dies decem et Cola.

tive nature, adapt his dress to the climate and changes of the weather, and bathe frequently in cold water.

The use of a tepid bath of about 96 or 98 degrees of heat for half an hour every other day for two or three months, has likewise in many instances proved of great service to dyspeptic persons. Indeed it would be best to begin with tepid bathing, and so reduce the temperature gradually. Tepid bathing communicates heat to the system, and it likewise stimulates it, and causes absorption more than exhalation.

The mind is to be amused at the same time that the body is employed; hence it is that mineral waters, and places of public resort, have always been found very efficacious in removing dyspeptic complaints. Mineral waters are indeed of themselves powerful remedies in cases of dyspepsia; but their efficacy is greatly increased by drinking them at the spring, where the patient's mind being constantly engaged by the company, and a great variety of amusements, he is sure to receive both hope and entertainment. The advantages of air, exercise, particularly on horseback, and agreeable prospects, admirably coincide, in most cases, with the general curative effect of the spring itself.

Buxton water is found of considerable service in removing many of the symptoms of defective digestion and derangement of the alimentary organs consequent to a life of high indulgence and intemperance. A judicious use of this simple remedy, Dr. Saunders* observes, will often relieve the distressing symptoms of heart-burn, flatulency, and sickness; and if persevered in, will increase the appetite, render the secretions more regular, and improve the general health and spirits that are so intimately connected with the functions of the digestive organs. A spontaneous diarrhœa is sometimes a consequence of its use at first; but it is more common, especially in habits where the action of the bowels is naturally sluggish, for costiveness to come on during a course of this water, which must be remedied by laxative medicines.

In dyspeptic affections, spasms of the stomach, or intestinal canal, and similar disorders, great benefit is derived from a use of Bath water; but it ought to be persisted in for a considerable length of time. Dyspepsia, foulness of the stomach, bilious vomiting, acidity, heart-burn, and spasmodic pains in any part of the alimentary canal, are complaints in which a use of Seltzer water affords likewise the greatest relief.

Pyrmont water is another remedy which may be advantageously used in all cases of debility, where the constitution requires an active tonic, and which at the same time does not excite a permanent heat. It increases the secretion of urine, and sometimes occasions a temporary eruption on the skin. It is of an agreeable, though strongly acidulated taste, and emits a large portion of gas, which affects those who drink it with a sensation somewhat resembling that produced by intoxication. The dose must vary according to circumstances, and the nature of the pa-

* See his Treatise on Mineral Waters.

tient's complaint, but in general the quantity to be taken ought not to exceed three pints per day.

If a person residing in a warm climate should labour under chronic weakness for any length of time, he will act prudently in removing to a colder one before the disease becomes inveterate, and lays the foundation of some dangerous complaint. If his circumstances or business will not admit of such a change, he ought then to remove to the coolest situation that can be procured, or, in preference to remaining on shore, he may sleep on board of some vessel, and as often as opportunities offer, he should make short voyages, as wonderful recoveries have been effected by sea air, in cases of this nature.

The diet in dyspepsia ought to be nutritive and generous, consisting chiefly of animal food on account of the disposition to acescency, and it should be taken every three or four hours, and never exceed a few ounces at any one time. Moreover, due care is to be taken to masticate it properly, in order that it may be reduced by comminution and salival commixture to a semi-fluid state. Instead of fermented bread, the patient should eat biscuit with his food. No diluent fluids should be taken with the food, nor until some time after each repast, lest the solvent property of the mixed saliva should thereby be diminished; nor should the quantity of fluid taken at once ever exceed half a pint, nor be repeated oftener than at intervals of three hours. About half an hour before swallowing the portion of aliment proposed, brisk friction should be performed with a flesh-brush over the region of the stomach during some minutes, and a similar operation may follow the meal.

A moderate use of wine ought to be allowed; but should it disagree with the patient and become acid on his stomach, weak brandy and water may be substituted for ordinary drink. Under no other circumstances should a use of ardent spirits be resorted to, as, by an indulgence in them, a habit imperceptibly steals on, before the person is aware of the consequences to which it leads. By too free a use of spirituous liquors, obstructions in the principal organs ensue; the nervous system becomes blunted and depraved to every feeling; the energies of the mind suffer; loss of memory takes place; a train of nervous disorders come on; and an attack of jaundice, dropsy, or consumption, soon terminates existence.

In this progress, even the passages to the stomach lose their feeling, become indurated and callous, and the organ itself, taking on the same state, has its digestion impaired, and becomes unfit to prepare nourishment for the body. Pure wine in a moderate quantity gently stimulates, increases the action of the heart and arteries, and augments the nervous energy over the whole body, communicates a serenity and ease of mind, a liveliness of imagination, and a powerful exertion of every faculty; but on the other hand, if taken immoderately, these favourable appearances are changed; the powers of the nervous system are weakened, the mind is deranged, and in the end both motion and sensation are lost.

In that species of chronic debility which is brought on by drinking

spirituous or fermented liquors to excess, there is not much reason to expect a return to healthful vigor, where the power of digestion is considerably destroyed; but in other cases the person may probably recover his health by a prudent and gradual diminution of the quantity of spirits. In such a case, he should at first omit one fourth of the quantity of spirit he has lately been accustomed to, and if in a fortnight his appetite increases, he should be advised to omit another fourth; but if he perceives that his digestion becomes more impaired from the want of the usual quantity of spirituous potation, he should then be advised to continue as he is, and rather bear the ills he has, than risk the encounter of greater. Animal food, with or without spice, is at the same time to be recommended, as likewise the Peruvian bark with myrrh and steel between his meals. At night he may take half a grain or a grain of opium, with five or eight grains of rhubarb.

Of the HYPOCHONDRIAC AFFECTION, or HYPOCHONDRIASIS.

THIS disease, known likewise by the name of low spirits or the vapours, is a certain state of the mind along with dyspepsia, wherein the greatest evils are apprehended upon the slightest grounds, and the worst consequences imagined from any unusual feeling even of the slightest kind; and in respect to such apprehensions and feelings, there is always the most obstinate belief and persuasion.

Hypochondriasis bears a strong resemblance to dyspepsia; but there is this difference between them, that the former prevails at an advanced period of life, and is more an affection of the mind than of the body; whereas the latter occurs principally from the age of puberty to that of 35, and depends chiefly on debility. Hypochondriasis may moreover be distinguished from dyspepsia by the languor, listlessness, want of resolution and activity, fear of death, and suspicious disposition being always present, and by the dyspeptic symptoms being often absent, or when present, they are in a much slighter degree.

Men of a melancholic temperament, whose minds are capable of great attention, and whose passions are not easily moved, are at an advanced period of life most liable to be attacked with this disease, and when it has once taken place, it goes on increasing as life advances, being usually most troublesome in the autumnal and winter seasons, which accounts for more acts of suicide being committed at these times of the year than at any other.

The English have been accused as the nation of all others which is addicted to suicide; and perhaps this proneness ought more reasonably to be attributed to an indulgence in unhappiness, and domestication of misery from trivial circumstances, than to the influence of fogs, or the physical effects of coal fires, as have been assigned by foreigners.

Hypochondriasis seems to depend on a loss of energy in the brain, or on a torpid state of the nervous system, induced by various remote causes, such as close and intense study, long and serious attention to abstruse

subjects, the constant remembrance of some material loss or disappointment which has occurred, great anxiety of mind, leading an inactive, indolent or sedentary life, immoderate venery, or a use of crude, flatulent, and unwholesome food, being guilty of great irregularity and intemperance; as likewise by obstructions in the viscera, and by long-continued evacuations.

The hypochondriac affection is attended with inactivity, a want of resolution with respect to all undertakings, lowness and dejection of spirits, great despondency, and apprehension of evil upon the slightest grounds, and a dread of danger from any unusual feeling, even of the slightest kind, together with flatulency in the stomach and bowels, acid eructations, costiveness, a copious discharge of pale urine, spasmodic pains in the head and other parts of the body, giddiness, dimness of sight, and palpitations. In short, it is attended with such a long train of symptoms, that it would fill many pages to enumerate them all, as there is no function or part of the body that does not suffer in its turn by its tyranny; the miserable patient entertains wild imaginations, and fancies that he labours under almost every disease; and with respect to these feelings and apprehensions, he entertains the most obstinate belief, being highly displeased if any attempt is made to reason with him on the absurdity of his persuasions.

There are few examples of hypochondriacal people, who find themselves worse at night than in a morning: the generality of them, like most of those who are afflicted with any of the complaints styled nervous, are seemingly hurt by their sleep, little as it is; and the longer they happen to sleep, the worse they are; they awake out of it with confusion, and do not come immediately to themselves; and when they do, they can think only of melancholy subjects, and feel the worst horrors of their disorder. This state continues till dinner, with very little abatement: after dinner they feel themselves a little revived; and at night the tide of their spirits returns, which being desirous to enjoy, and dreading their certain ebb when they lie down, they go late and with reluctance to bed.

In hysteric women the operations of the animal powers seem to be the most disturbed and perverted; but in men the mind is most affected; involuntary exclamations, faintings and convulsions of all sorts, being most common in women, and silent despair in men. Hence, perhaps, suicide occurs more frequently with men than among women.

As to the prognostic, the disease, if recent, is rather to be regarded as troublesome than dangerous; but if long continued, it is apt to produce scirrhi of the viscera, cachexy, dropsy, incurable melancholy, or madness.

On dissections of hypochondriacal persons, some of the abdominal viscera (particularly the liver and spleen) are usually found considerably enlarged. In some few instances, effusion, and a turgescence of the vessels, have been observed in the brain.

The indications of cure in this disease seem to be,

1st, To excite the nervous energy which has been depressed, and that particularly, by attending to the state of the mind.

2dly, To remove or alleviate the symptoms which serve to continue and aggravate the disease.

3dly, To strengthen the alimentary canal, and promote the secretions.

To answer the first of these indications, the patient's attention is to be engaged and diverted to other objects than his own feelings; he is to be directed to vary the scene frequently by going from one place to another; to associate as much as possible with agreeable cheerful company; to engage in such pursuits as will afford him moderate exercise in the open air, which riding on horseback and field sports, as hunting and shooting, are particularly calculated to do; and by all means to avoid absolute idleness; but in doing this, all application to former studies, especially professional ones, is to be forbid: entertaining books will, however, be serviceable, as assisting to divert the mind from itself.

Compassion, and not raillery, is to be bestowed on him, as the firm persuasion which he entertains will not allow his feelings to be treated as imaginary, nor his apprehension of danger to be considered as groundless, however the physician may be of opinion, that it is the case in both respects. To gain his confidence, it will be necessary to attend to his complaints, as if they were all real; and to satisfy him, it will by all means be advisable to give him some kind of innocent medicine or placebo, changing it from time to time, whenever he expresses any disappointment of relief. The general health is at the same time to be put into the best state possible.

The complaints of hypochondriacs should be treated by the physician as of real existence; and from whatever cause they may arise, it is his province to employ his art to subdue it; not to ruffle an irritable mind by unseasonable levity, or expose a morbid sensibility to insult and reproach.

From the slow evacuation of the stomach in melancholic temperaments, acidity often prevails in a high degree with hypochondriacs; to obviate which, and answer the second indication of cure, it will be necessary for the patient to make use of absorbents, and alkalies, as advised under the head of Dyspepsia.

Vomiting, though sometimes employed, is by no means suited to this disease.

Costiveness, which is another frequent symptom in hypochondriasis, is to be obviated by instituting a regular custom of periodically soliciting an evacuation by voluntary and persevering efforts once or twice a day at certain hours; and until the desired intention can be established in this way, some gentle laxative may be taken occasionally, as mentioned under the head of Dyspepsia.

Harrogate water may be used with a fair prospect of advantage in correcting the obstinate costive habit of body that accompanies hypochondriasis; and this habit, when removed by mineral waters, appears

to be less liable to return, than when only the resinous and drastic cathartics are employed.

Flatulency is another constant attendant, and is to be prevented by making use of carminatives, essential oils, and spices, formulæ of which will likewise be found under the head of Dyspepsia.

Besides these affections, hypochondriacs are apt to be troubled with spasmodic pains in the head and stomach; to relieve which, it may be proper to employ such medicines as æther, musk, and opium, either given separately, or combined together.*

Asafœtida, castor, camphor, valerian, volatile salts, salt and oil of amber, are medicines which are likewise much employed in the cure of the disease: and therefore when the patient loses a confidence in the one, we can readily substitute another, hypochondriacs being seldom satisfied, unless they are liberally supplied with some drug or other. Various forms of these remedies will be found under the heads of Hysteria and Epilepsy.

In hypochondriasis, as well as in most other nervous diseases, it is too much the custom with many, to addict themselves to a frequent and immoderate use of opium in some form or other; but this remedy should be carefully shunned, unless on urgent occasions; for although it may afford some little relief for the present, it will nevertheless, by a constant use, greatly add to the disease. The immediate effect produced by opium upon such as addict themselves to its use is, that with an increase of the frequency of the pulse, the heat of the body is generally somewhat augmented, so as to produce very often flushings in the face; and from a depressed state, they become active and alert with an exhilaration of spirits; but after the operation of the remedy is over, depression of mind ensues, the body is cold and heavy, and in this dull and indolent condition it remains until the dose is repeated!

The peculiar power which the citric acid possesses of counteracting the noxious effects of opium is deserving of attention by those who accustom themselves to a regular use of this drug; and it has indeed been recommended by some physicians, that with every dose of opium a proportion of the juice of lemons, or oranges, in the quantity of two ounces to the grain of opium, should be taken; by this means the uneasiness which the medicine often occasions will be prevented, its depressing consequences avoided, and the tendency to constipation obviated. To

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* ℞. Æther. Sulph. ℥fs.
Capiat. gutt. xx.—xxx. pro dos.
Vel
℞. Mofch. gr. xv.
Aq. Anethi ℥jfs.
Æther. Sulphur. gutt. xx. M.
ft. Hauftus ter die fumendus.
Vel
℞. Infus. Gentian. C. ℥jfs.
Tinct. Card. C. ℥ij.
Æther. Sulphur. gutt. xxv.
Tinct. Opii gutt. x. M.
ft. Hauftus.

Vel
℞. Spt. Carui ℥ij.
Aq. Fontan. ℥iv.
Æther. Sulph. ℥j.
Tinct. Opii gutt. xl.
—— Lavend. C. ℥fs. M.
ft. Mistura cujus sumat Cochl. larg. ij.
ter quaterve die.

a very free use of the vegetable acids is ascribed the slight effect which opium produces on the Turks, and not to the influence of coffee, as has been alleged by some. These people, as well as others of the eastern nations, are in the habit of drinking daily large quantities of sherbet, which is a liquor composed of the juice of lemons or oranges, mixed with water and sugar.

Many of those who labour under a lowness of spirits have recourse to wine, and what is still worse, to spirituous liquors, in order to raise them. No words can be too strong to point out the danger of such a practice in its proper colours. The momentary relief which is obtained is much too dearly bought by the far greater languor which succeeds: and the necessity of increasing the quantity of these liquors in order to obtain the same effect, irrecoverably ruins the health, and this in the most miserable manner, as has been noticed under the head of Dyspepsia.

It is indeed difficult to determine whether the use of opium or of strong fermented liquors is most detrimental to the human constitution; unluckily the victims who addict themselves to either are ensnared by a habit which they find it impossible to relinquish, because the constitution, when habituated to a strong stimulus, becomes incapable of carrying on the functions of life without continual excitement, which of itself brings on debility and premature decay.

To answer the third indication of strengthening the alimentary canal, and promoting the secretions, a plaster of Burgundy pitch or laudanum is to be applied to the abdomen, and chalybeates are to be employed, as advised under the head of Dyspepsia.

Mineral waters, particularly those of Bath and Tunbridge, have been used in hypochondriacal cases with infinite advantage to the patient, which perhaps may be attributed as much to the amusements and avocations accompanying the drinking of these waters at the springs, as to the tonic power they possess, from the small quantity of iron with which they are impregnated. Perhaps the elementary water, by favouring the excretions, may have a share in relieving the disease.

Bitters and astringents are generally supposed to be improper in hypochondriasis, because there is not a loss of tone, as in dyspepsia; but only a torpor, or want of activity. Chalybeates, however, may be advisable.

As a general stimulant, cold bathing may sometimes seem useful to the hypochondriac, as well as to the dyspeptic; but this does not often happen, as tepid bathing proves in general much more useful, from the rigidity of the solids which prevails. A bath of about 96 or 98 degrees of heat used for half an hour once a day, or every other day, has in many instances proved of great service. Where a natural warm bath can be procured, a preference should be given to it.

Frictions of the whole body every morning and evening for ten minutes or longer, with coarse flannel cloths, will be likely to prove beneficial; and so will be also gentle exercise on horseback in the open air every day.

The diet in this disease should consist of what is light, generous, and

nutritive, avoiding what is apt to prove either acescent or flatulent; and therefore animal food will be most proper. The stomach ought never to be overloaded; neither should it be suffered to remain perfectly empty. If a faintness is perceived at any time between meals, a bit of cake or biscuit may be taken with a glass of wine; which precaution will be the more necessary with those in high life, from the late hour at which dinner is usually served up. Port wine, or good Madeira, properly diluted with water, may be used for ordinary drink, instead of beer or ale; but should these disagree with the stomach, water, with a small proportion of brandy, may be drank in their stead. Tea and coffee are improper articles of diet for hypochondriacs; but more particularly when taken very warm. For breakfast, cocoa, chocolate, and infusions of aromatic herbs and roots, such as balm, sage, and ginger, may be substituted instead of these.

ORDER III.

SPASMI.

IRREGULAR or preternatural motions of the muscles or muscular fibres are the characteristics of this order of diseases.

Of the HYSTERIC DISEASE, or HYSTERIA.

THIS complaint appears under such various shapes, imitates so many other diseases, and is attended with such a variety of symptoms, which denote the animal and vital functions to be considerably disordered, that it is difficult to give a just character or definition of it; and it is only by taking an assemblage of all its appearances, that we can convey a proper idea of it to others.

The disease attacks in paroxysms or fits. These are sometimes preceded by dejection of spirits, anxiety of mind, effusion of tears, difficulty of breathing, sickness at the stomach, and palpitations at the heart; but it more usually happens that a pain is felt on the left side, about the flexure of the colon, with a sense of distention advancing upwards, till it gets into the stomach; and removing from thence into the throat, it occasions by its pressure a sensation, as if a ball was lodged there, which by authors has been called globus hystericus. The disease having arrived at this height, the patient appears to be threatened with suffocation, becomes faint, and is affected with stupor and insensibility; while at the same time the trunk of the body is turned to and fro, the limbs are variously agitated, wild and irregular actions take place in the alternate fits of laughter, crying, and screaming; incoherent expressions are uttered, a temporary delirium prevails, and a frothy saliva is discharged from the mouth. The spasms at length abating, a quantity of wind is evacuated upwards, with frequent sighing and sobbing, and the woman recovers the exercise of sense and motion

without any recollection of what has taken place during the fit, feeling, however, a severe pain in her head, and a soreness over her whole body.

In some cases there is little or no convulsive movement, and the person lies seemingly in a state of profound sleep, without either sense or motion.

Hiccup is a symptom which likewise attends in some instances on the hysteric disease; and now and then it happens that a fit of hysteria consists of this alone. In some cases of this nature it has been known to continue for two or three days, during which it frequently seems as if it would suffocate the patient, and proceeds gradually weakening her, till it either goes off, or else occasions death by suffocation; but this last is extremely rare. Besides hiccup, other slight spasmodic affections sometimes wholly form a fit of hysteria, which perhaps continue for a day or two, and then either go off of themselves, or are removed by the aid of medicine.

In some cases the patient is attacked with violent pains in the back, which extend from the spine to the sternum, and at length become fixed upon the region of the stomach, being evidently of a spasmodic nature and often prevailing in so high a degree, as to cause clammy sweats, a pale cadaverous look, coldness of the extremities, and a pulse hardly perceptible.

Hysteric affections occur more frequently in the single state of life than in the married, and most usually between the age of puberty and that of thirty-five years; and they make their attack oftener about the period of menstruation, than at any other.

They are readily excited in those who are subject to them, by passions of the mind, and by every considerable emotion, especially when brought on by surprise: hence sudden joy, grief, fear, &c. are very apt to occasion them. They have also been known to arise from imitation and sympathy.

Women of a delicate habit, and whose nervous system is extremely sensible, are those who are most subject to hysteric affections; and the habit which predisposes to their attacks, is acquired by inactivity and a sedentary life, grief, anxiety of mind, late hours, dissipation, a suppression or obstruction of the menstrual flux, excessive evacuations, and the constant use of a low diet, or of crude unwholesome food.

Hysteria differs from hypochondriasis in the following particulars, and by paying attention to them may always readily be distinguished from it. Hysteria attacks the sanguine and plethoric; comes on soon after the age of puberty; makes its onset suddenly and violently, so as to deprive the patient of all sense and voluntary motion; is accompanied with the sensation of a ball rising upwards in the throat, so as to threaten suffocation; is attended usually with much spasmodic affection; is more apt to terminate in epilepsy than in any other disease; and, on dissection, its morbid appearances are confined principally to the uterus and ovaria.

The reverse happens in hypochondriasis. It attacks the melancholic; seldom occurs till after the age of thirty-five; comes on gra-

dually; is a tedious disease, and difficult to cure; exerts its pernicious effects on the membranous canal of the intestines, as well by spasms as wind; is more apt to terminate in melancholy or a low fever than in any other disease; and on dissection exhibits its morbid effects principally on the liver, spleen, and pancreas, which are often found in a hard, scirrhous, or other diseased state.

Another very material difference might be pointed out between these two diseases, which is, that hysteria is much relieved by advancing in age, whereas hypochondriasis usually becomes aggravated.

The two diseases have been often confounded together; but from considering the foregoing circumstances, it appears that a proper line of distinction should be drawn between them.

The hysteric passion likewise differs from a syncope, as in this there is an entire cessation of the pulse, a contracted face, and a ghastly countenance; whereas in the uterine disorder there is often something of a colour, and the face is more expanded; there is likewise a pulse, though languid; and this state may continue two or three days, which never happens in a syncope.

It also differs from apoplexy, in which the abolition of sense and voluntary motion is attended with a sort of snoring, great difficulty of breathing, and a quick pulse; which do not take place in hysteric cases.

It differs from epilepsy, in that this is supposed to arise in consequence of a distention of the vessels of the brain; whereas in hysteria, the spasmodic and convulsive motions arise from a turgescence of blood in the uterus, or in other parts of the genital system. Hysteria may be distinguished from epilepsy by the globus hystericus, by the great flow of limpid urine, by the sudden transitions from laughing to crying, and by the fear of death preceding and succeeding to the paroxysm.

However dreadful and alarming an hysteric fit may appear, still it is seldom accompanied with danger, and the disease never terminates fatally, unless it changes into epilepsy, or mania, or the patient is in a very weak reduced state.

In the cure of hysteria two indications are to be attended to.

The first is to allay the spasmodic symptoms which constitute the fit; and,

The second, to lessen the excitability of the nervous system, and strengthen the whole frame during the intermissions of paroxysms.

The first of these indications is to be answered by bleeding, if the patient is young and plethoric, the pulse full, and the attack quite of a recent nature; but in weak and delicate constitutions, or where the disease has been of long standing, we should never have recourse to this operation.

During the fit it will be the safest practice to rouse the patient by applying burnt feathers, asafœtida, or volatile salts or spirits, to the nose; by rubbing the temples with æther, and by putting her feet into warm water.

In case of costiveness, a laxative clyster, with an addition of asafœtida or castor, may be thrown up into the intestines; and where the fit con-

tinues for any length of time, a small blister may be applied to the inside of each leg. During the fit, due care is to be taken that the patient sustains no injury from the violence of her struggles.

As soon as she is perceived to be capable of swallowing, some antispasmodic, as asafœtida, castor, ammoniated tincture of valerian, oil of amber, &c. should be given to her frequently. Such medicines may either be administered separately, or be combined together, as in the formulæ below.* In those cases where the spasms are very violent, and the fit of long duration, opium may be employed in addition to other antispasmodics. In common cases it will, however, be best to avoid its use, as it seldom fails to leave the patient remarkably low, particularly if long continued.

In cardialgic paroxysms of the hysteric kind, the aqua kali, in doses of from thirty to forty drops, frequently repeated, has been found an excellent palliative remedy, and may therefore be prescribed.

The second indication is to be answered by giving medicines during the intermissions of the paroxysms to strengthen the system, such as the Peruvian bark, and other bitters, with the sulphuric acid, and chalybeates; proper formulæ of which have been inserted under the head of Dyspepsia; but if more agreeable to the practitioner, those mentioned below† may be used.

Mineral waters are found to be very efficacious in hysteric affections, and their powers may greatly be increased by proper exercise, particularly riding on horseback, together with early rising, a generous nutritive diet, cool dry air, and cold bathing.

In addition to these, the mind is to be kept constantly easy and cheerful, and, if possible, to be always engaged in some agreeable and interesting pursuit; for which reason, watering-places are well adapted

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* ℞. Gum. Asafœtid. ʒj. Solve in Aq. Puleg. ʒvj. et adde Tinct. Castor. ʒiij.
——— Valerian. V. ʒij.
Æther. Sulphuric. ʒj. M.
ft. Mistura cujus sumat Cochl. ij. tertia hora.

Vel

℞. Tinct. Valerian. Vol. ʒj.
——— Lavend. C. ʒij.
Spirit. Ammon. C. ʒj.
Aquæ Puræ ʒv. M.
ft. Mistura Capiat Cochl. j. pro dos.

Vel

℞. Aq. Cinnam. ʒjfs.
Tinct. Castor. ʒij.
Spirit. Ammon. Fœtid. gutt. xx.
Æther. Sulphuric. gutt. xv. M.
ft. Haustus 4ta quaq. hora sumendus.

Vel

℞. Spirit. Ammon. Fœtid. ʒfs.
Guttæ xx.—xxx. pro dos. sumendæ.

Vel

℞. Æther. Sulphuric. ʒfs.
Capiat. gutt. xx.—xxx. in quovis vehiculo.

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† ℞. Ferri Rubigin. gr. vj.
Extract. Cort. Peruv ℈j. M.
ft. Bolus bis in die sumendus cum Infus. Quassiæ ʒij.

Vel

℞. Extract. Cort. Peruv.
Pulv. Myrrh. āā ʒjfs.
Ferri Vitriolat. ʒfs.
Ol. Cinnam. gutt. v.
Syrup. Zingib. q. s. M.
fiant Pilulæ lx. quarum capiat ægra ij. vel iv. ter in die; superbibendo Infus. Gentian. C. ʒij.

for those who are subject to hysteric affections, and particularly where they have taken their origin from grief, anxious thoughts, or other distresses of the mind.

If the stomach is affected at any time with phlegm, so as to excite nausea, a gentle emetic may be taken to remove it; or if there is a tendency to costiveness, it may be obviated by some gentle laxative, as advised under the head Dyspepsia.

When hysteric affections arise from a suppression or obstruction of the menses, these evacuations must again be promoted by adopting the means recommended under those particular heads.

Hysterical women are often afflicted with slight spasmodic affections in various parts of the body, and particularly with cramps, which are most apt to seize them in bed, and when asleep. In mild cases of this nature, immersing the feet and legs in warm water will often be sufficient to remove them; but where the spasms are violent, and of some duration, we must attempt the cure by opiates, musk, æther, camphor, &c. internally, and by the warm bath, and frictions with anodyne liniments externally.

In those cases where the stomach becomes affected with cramp, we must have recourse to considerable doses of æther combined with opium.* Its external region may likewise be anointed with a liniment of the same nature.† If the feet are cold, bottles filled with warm water should be applied to them. Throwing up an emollient clyster into the intestines may also be proper, particularly where costiveness accompanies the spasmodic affection of the stomach.

To lessen the irritability or excitability of the system, and produce permanent effects, some physicians have recommended a use of antispasmodics along with tonics. The undermentioned formulæ‡ may be advised on the occasion, the patient washing them down with a little valerian tea.

From the great disposition of the stomach to acescency in this disease, as well as in hypochondriasis, a diet of animal food will be most proper. Wine diluted with a sufficient quantity of water should be preferred to all other liquors for common drink.

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* ℞. Aq. Cinnam. ℥j.
Æther. Sulphuric. ℥j.
Tinct. Opii gutt. xx.
—— Castor. ℥fs.
Spirit. Carui ℥fs. M.
ft. Haustus ter quaterve die capiendus.

† ℞. Spirit. Camphorat. ℥ij.
Tinct. Opii ℥fs.
Æther. Sulphuric. ℥iij. M.

‡ ℞. Mosch. gr. vj.
Camphor. gr. iij.
Extract. Cinchon. ʒfs. M.
ft. Bolus bis terve die sumendus.
Vel
℞. Pulv. Myrrh.
—— Castor. ää ℥j.
Ferri Vitriolat. ʒj.
Extract. Chamæmel. ℥fs.
Ol. Succin. gutt. v.
Syrup. Simpl. q. f. M.
fiant Pilul. xxxvj. quarum capiat ægra iv. mane et hora decubitis cum Cochl. ij. magnis.
Infusi Columb.

Of EPILEPSY, or EPILEPSIA.

THIS disease consists in a sudden deprivation of the senses, accompanied with a violent convulsive motion of the whole body.

It attacks by fits, and after a certain duration goes off, leaving the person most commonly in his usual state; but sometimes a considerable degree of stupor and weakness remains behind, particularly where the disease has frequent recurrences. It is oftener met with among children than grown persons, and boys seem more subject to its attacks than girls. Its returns are periodical, and its paroxysms commence more frequently in the night than in the day, being somewhat connected with sleep. It is a disease sometimes counterfeited, in order to extort charity or excite commiseration.

Epilepsy is properly distinguished into sympathic and idiopathic, being considered as sympathic, when produced by an affection in some other part of the body, such as acidities in the stomach, worms, teething, &c.; and idiopathic, when it is a primary disease, neither dependant on, nor proceeding from any other.

The causes which give rise to epilepsy, are blows, wounds, fractures, and other injuries done to the head by external violence, together with lodgments of water in the brain, tumours, concretions, and polypi. Violent affections of the nervous system, sudden frights, fits of passion, great emotions of the mind, frequent intoxications, acute pains in any part, worms in the stomach or intestines, teething, the suppression of some long-accustomed evacuation, too great emptiness or repletion, and poisons received into the body, are causes which likewise produce epilepsy. Sometimes it is hereditary, and at others it depends on a predisposition arising from a mobility of the sensorium, which is occasioned either by plethora or a state of debility.

An attack of epilepsy is now and then preceded by a heavy pain in the head, dimness of sight, noise in the ears, palpitations, flatulency in the stomach and intestines, weariness, and a small degree of stupor, and in a few cases there prevails a sense of something like a cold vapour or aura rising up to the head; but it more generally happens, that the patient falls down suddenly without much previous notice; his eyes are distorted or inverted, so as that only the whites of them can be seen; his fingers are closely clenched; his limbs and the trunk of his body, particularly on one side, are much agitated; he foams at the mouth, and thrusts out the tongue, which often suffers great injury from the muscles of the lower jaw being also affected; he loses all sense of feeling, and not unfrequently voids both urine and fæces involuntarily.

The spasms abating, he recovers gradually; but on coming to himself, feels very languid and exhausted, and retains not the smallest recollection of what has passed during the fit.

When the disease arises from an hereditary disposition, or comes on after the age of puberty, or where the fits recur frequently, and are of long duration, it will be very difficult to effect a cure; but when it at-

tacks at an early age, and is occasioned by worms, or any accidental cause, it may in general be removed. In some cases it has been entirely carried off by the recurrence of a fever, or by the appearance of the menses, or of a cutaneous eruption. It has been known to terminate in apoplexy, and in some instances to produce mental derangement, or a loss of the powers of the mind, and so to end in idiotism.

Epilepsy has been perceived to disappear suddenly about the age of puberty where it has attacked children of five or six years old, and where no treatment has had any effect. The number of fits are always increased by parturition, and by every other thing which has a tendency to debilitate the system.

The appearances usually to be observed on dissection, are serous and sanguineous effusion, a turgid tense state of the vessels of the brain without any effusion, a dilatation of some particular part of the brain, excrescences, polypi and hydatids adhering to it, and obstructing its functions, and likewise ulcerations. V. Fin. Morb.

In epilepsy, the intentions of cure should vary according to the cause which occasions the disease.

When it is sympathic, and arises from worms, medicines possessed of the power of destroying or dislodging these vermin ought to be employed. When it proceeds from teething, that part of the gum which appears to be inflamed should be scarified, the body should be kept open by laxative medicines or emollient clysters, and the feet be bathed in warm water. When it is suspected to arise from acidities in the stomach, a gentle emetic should be given, and absorbents and alkalies afterwards be used.

If the disease appears to proceed from any suppressed discharge, in particular the hæmorrhois, leeches should be applied to the hæmorrhoidal vessels, together with fomentations, and we should at the same time administer aloetic cathartics.

Where it attacks children of a costive habit, and seems to take its rise merely from a foulness of the bowels, active purgatives should be employed. A combination of calomel and jalap will be very proper.

If it arises from any stimulus, which, by exciting pain, occasions the complaint, this ought to be removed as quickly as possible. If it is a case of sympathic epilepsy, and is accompanied with the aura epileptica, we should then endeavour to destroy the part either by cutting it out, or by applying caustic to it; and when these means cannot be adopted, we ought then to endeavour to correct the morbid affection in it either by blisters, or by inserting an issue in the part.

Should the disease seem to proceed from the partial division of a nerve, and it can be got at readily, we ought to cut through it in the same manner as in tetanus. Cutting off the communication with the brain has likewise been attempted, by the application of ligatures upon the limb, above the part from which the aura arises.

A case which was successfully treated in this way, is recorded by Mr. Adolphus T. Loeffler, Professor at Altona, in his Observations on

Medicine and Surgery. An epileptic patient felt on every attack, a sense of coldness at the sole of the foot, and which gradually ascended till it reached the head. It occurred to the Professor to make a strong ligature above the knee of the affected limb before the cold sensation had proceeded so high. The method succeeded; and as often as he took this precaution sufficiently early, he prevented the attack from taking place.

In the idiopathic epilepsy, the cure consists in avoiding the occasional causes, and in removing or correcting those which predispose to it.

The occasional causes which are to be avoided, are over-distention, turgescence, intoxication, fits of passion, and all other emotions of the mind; and as the disease is confirmed by repetition and habit, so the avoiding frequent recurrences of it, is of the utmost importance.

It is a fact well supported, that in some instances the disease has been found to continue from custom alone, after the original cause had long ceased to act. In such cases, our endeavors should be exerted to make nature discontinue this custom if possible. When an attack can be foreseen, no medicine, perhaps, under such circumstances will be more likely to prevent an epileptic fit, than an emetic given about an hour before its approach. Removing to another country, and changing former habits and the manner of living, may likewise be serviceable in such cases.

If the predisposition to the disease has arisen from a plethoric state of the system, or from a turgescence in the vessels of the head, this is to be obviated by bleeding, both generally and topically, but more particularly the latter; by an abstemious diet and proper exercise, and by issues. These last may not only be supposed to be good remedies for obviating the plethoric state of the system, but may likewise be the means of determining occasional turgescences to such places, and therefore of diverting them in some measure from their action upon the brain.

Epilepsy is one of the diseases in which the digitalis has been found serviceable, but most so in those cases where a plethoric state or turgescence in the vessels of the head prevails. To produce, however, a permanent effect, the constitution must be kept under its influence for some weeks, by giving from half a grain to one grain of the powder, or from fifteen to thirty drops of the tincture, three or four times a day. Under the head of Mania, I have mentioned a severe case of epilepsy in a middle-aged married woman, accompanied with mental derangement, wherein by administering the digitalis in the manner just noticed, and carefully guarding against the exciting cause (frequent intoxication,) a complete cure was effected.

When the predisposition is owing to a state of debility, which is most usually the case, we are to obviate and prevent its effects by recommending the patient to breathe a cool air, to make use of a generous nutritive diet, to take daily exercise adapted to his strength, particularly on horseback, and to go frequently into a cold bath; and besides adopt-

ing these steps, he may enter on a regular course of antispasmodic, astringent, and tonic medicines.

The antispasmodics in most general use are valerian, castor, musk, æther, oil of amber, oleum animale, oleum cajeputæ, arnica montana, belladona, hyoscyamus, digitalis, and opium, all of which may be given, as advised under the heads of Hysteria, Hypochondriasis, and Palsy, or as prescribed below.* A combination of opium and valerian, or of opium and musk, will be likely to prove valuable remedies. In particular, they should be given a short time before the expected return of the paroxysm, and be repeated at proper intervals, increasing the dose in a gradual manner, in proportion to the violence or frequent recurrence of the fits.

Where the disease depends upon a plethoric state, it would be highly improper to give opium, but where no plethora exists, and it seems to depend upon irritation, or upon increased excitement, opium will prove a safe and powerful remedy. When given in a large dose, such as two grains in substance, or sixty or seventy drops in tincture, on the approach of a fit, it has been known to prevent it altogether; but should it even fail in this, it will infallibly be found to lessen its violence.

If the stomach rejects the internal use of opium, its external application may possibly be resorted to with much advantage, and it may likewise be employed in this way during the convulsions. The whole spine of the back may be moistened with tinctura opii, or a liniment consisting of six grains of pure opium, well triturated with a little hog's-lard may be rubbed in.

The astringent medicine most celebrated formerly in the cure of epilepsy, was the misletoe, or viscus quercinus. It was given in doses of from half a drachm to a drachm of the powder, or about an ounce of the infusion, repeated twice a day. It was indeed looked upon by many, more as an object of superstition than of real utility, and for many years past has experienced almost total neglect. A modern writer on epilepsy† speaks, however, highly in its favour, and has recited several cases which were radically cured by it.

† See Dr. Henry Frafer's Treatife on this difeafe.

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* ℞. Aq. Anethi ℥ifs.
Tinct. Valer. Vol. ʒfs.
——Castor. ʒj.
Æther. Sulphuric. gutt. xx. M.
ft. Hauftus bis terve die sumendus.

Vel

℞. Mofch.
Castor. Rus. āā gr. x.
Opii gr. fs.—j.
Conferv. Rofæ q. s. M.
ft. Bolus 6ta quaq. hora capiendus.

Vel

℞. Ol. Succin. Rectific. ℥fs.
Guttæ x.—xxv. supra sacchar. inftil. pro dos. sumendæ.

Vel

℞. Ol. Animal. ℥fs.
Capiat gutt. xx.—xxx. pro dos.

Vel

℞. Æther. Sulphuric. ℥fs.
Guttæ xx.—xxx. in Aquæ cyatho pro dos. sumendæ.

Vel

℞. Tinct. Valerian. Vol. ℥fs.
Capiat gutt. xx.—xl. pro dos.

As a tonic, the Peruvian bark has been much employed in the cure of this disease. Its use seems, however, best adapted to those epilepsies which recur at certain periods, and which are without plethora; in which cases, if it is given in a considerable quantity some little time before the expected recurrence, it will be very likely to prove serviceable. When taken for a constancy, it may be combined with valerian, &c. as below.*

Metallic tonics having been found more powerful than the vegetable ones, have therefore been more generally employed. The preparations of iron most used are the ferrum vitriolatum, the ferrum ammoniacale,† and the ferri rubigo. That of copper is the cuprum ammoniacum‡ of the Edinburgh Dispensary, which may be given in small doses, at first of about a grain, repeated twice a day, increasing them gradually to as much as the stomach will bear. The pulvis stanni, and other preparations of tin, have likewise been used in the cure of epilepsy; but their effects seem doubtful.

Flores zinci (now zincum calcinatum) have been much extolled for their virtues in this disease. The dose is from one grain§ to three, four, or five, which may be taken either in pills or a bolus. It will always be the best way to begin with a single grain, repeated three or four times a day, and so to increase the dose gradually, according to the effect it produces on the stomach.

Zincum vitriolatum is another metallic tonic much recommended in this disease.

Arsenic has likewise been employed in the cure of epilepsy with some success. It will be best administered in the form of solution, as recommended under the head of Intermittent Fever.

Some instances of the cure of epilepsy having occurred from an accidental use of mercury; this also has been proposed as a remedy.

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* ℞. Cort. Peruv. Pulv. ℥j.
Pulv. Valerian. ℥ss.
Rubig. Ferri ʒij.
Syr. Cort. Aurant. q. s. M.
ft. Electuarium cujus sumat Cochl. minim. 4ta quaq. hora.

† ℞. Ferri Ammoniac. gr. x.—℈j.
Conserv. Rosæ q. s. M.
ft. Bolus ter in die sumendus.
Vel
℞. Tinct. Ferri Ammoniac. ℥j.
Capiat guttas xx. bis terve die in Aquæ frigid. cyath. ℈.

‡ ℞. Cupri Ammoniac. gr. ij.
Conserv. Aurant. gr. x. M.
ft. Bolus

§ ℞. Zinc. Calcinat. gr. xij.
Pulv. Aromat.
—— Chel. Cancr.
—— Sacchar. Alb. āā ℈j.
M. et in Chartul. xij. divid.

Vel

℞. Zinc. Calcinat. gr. iij.
Conserv. Rosæ q. s. M.
ft. Bolus bis in die sumendus.

℞. Zinc. Calcinat. gr. xxiv.
Extract. Gentian. ʒj. M.
ft. Massa in Pilulas xij. dividenda, quarum sumat j. mane et vespere.

The nitrat of silver* has lately been found to be a valuable medicine in the cure of epilepsy, even where the disease has been of many years standing. Two cases of this nature are recorded in the Medical and Physical Journal.† It will be best to begin with a quarter of a grain thrice a day, which dose will be sufficient for an adult.

In some of the worst cases of epilepsy, in which the fits were long and violent as well as frequent throughout the course of the day, and where the disease had been of some standing, electricity has been found to render them weaker, and to reduce their number very materially in a short space of time. When other means fail to procure the desired effect, we ought therefore to have recourse to this remedy, or galvanism.

The diet in epilepsy should consist of such things as are light, nutritive, and easy of digestion, taking care to avoid whatever is apt to prove flatulent. During the intervals, the patient is to keep himself as cheerful and tranquil as possible, carefully guarding against all violent passions or other emotions, and he should take care never to put himself in a hazardous situation, lest a fit should happen to attack him at that period.

When it is present, due care must be taken to prevent him from bruising himself; and especially that he does not get his tongue between his teeth. Rubbing the nose, temples, and pit of the stomach with vitriolic æther, may possibly help to abbreviate the fit by its action on the olfactory organ.

A smaller degree of epilepsy is where the sensibility and irritability remain, but there are spasmodic contractions of the muscles; hence we see many persons affected with twitchings of the face. There are also certain spasmodic pains that come on by paroxysms, which seem likewise of the epileptic kind.

When any of these arise as sympathic affections, they are only to be cured by removing the primary disorder upon which they depend; but where they take place independnet of any other disease, they are to be treated in the manner just recommended to be pursued in the cure of epilepsy.

Of the DANCE of St. VITUS, or CHOREA SANCTI VITI.

THIS disease is a convulsive action, most generally confined to one side, and affecting principally the arm and leg. When any motion is attempted to be made, various fibres of other muscles act which ought not, and thus a contrary effect is produced from what the patient in-

† See vol. i. p. 184, and vol. ii p. 70.

* ℞. Argent. Nitrat. gr. iij.
Solve terendo in Aquæ Diſtillatæ guttis aliquot, et adde
Micæ Panis q. s.
ft. Maſſa in Pilulas viginti diſtribuenda. Capiat duas vel tres bis die.

tended. It is chiefly incident to young persons of both sexes, but particularly those of a weak constitution, or whose health and vigour have been impaired by confinement, or by the use of scanty and improper nourishment, and makes its attacks between the age of ten and fifteen, occurring but seldom after that of puberty.

By some physicians it has been considered rather as a paralytic affection than as a convulsive disorder, and has been thought to arise from a relaxation of the muscles, which being unable to perform their functions in moving the limbs, shake them irregularly by jerks.

Chorea Sancti Viti is occasioned by various irritations, as teething, worms, acrid matter in the bowels, offensive smells, poisons, &c. It arises likewise in consequence of violent affections of the mind, as horror, fear, and anger. In many cases it is produced by general weakness, and in a few it takes place from sympathy at seeing the disease in others.

The fits are sometimes preceded by a coldness of the feet and limbs, or a kind of tingling sensation, that ascends like cold air up the spine, and there is a flatulent pain in the left hypochondrium, with obstinate costiveness. At other times the accession begins with yawning, stretching, anxiety about the heart, palpitations, nausea, difficulty of swallowing, noise in the ears, giddiness, and pains in the head and teeth, and then come on the convulsive motions.

These discover themselves at first by a kind of lameness or instability of one of the legs, which the person draws after him in an odd and ridiculous manner; nor can he hold the arm of the same side still for a moment; for if he lays it on his breast, or any other part of his body, it is forced quickly from thence by an involuntary convulsive motion. If he is desirous of drinking, he uses many singular gesticulations before he can carry the cup to his head, and it is forced in various directions, till at length he gets it to his mouth, when he pours the liquor down his throat with great haste, as if he meant to afford amusement to the by-standers. Sometimes various attempts at running and leaping take place, and at others the head and trunk of the body are affected with convulsive motions. The eye loses its lustre and intelligence, and the countenance is pale and expressive of vacancy; deglutition is occasionally performed with difficulty, and articulation is often impeded, and sometimes completely suspended. In the advanced periods of the disease, flaccidity and wasting of the muscular flesh take place, the consequence of constant irritation, of abated appetite, and impaired digestion.

In many instances the mind is afflicted with some degree of fatuity, and often shews the same causeless emotions, such as weeping and laughing, which occur in hysteria.

When this disease arises in children, it usually ceases again before the age of puberty, and in adults is often carried off by a change from the former mode of life. Unless it passes into some other disease, such as epilepsy, it is never attended with danger.

Where chorea arises in those of a weak irritable habit, and is wholly unconnected with any species of irritation, either of teething, worms, or

acrid matter in the first passages, we should not employ evacuants, but have recourse to strengthening remedies.

Peruvian bark in large doses, with the assistance of cold bathing, has often effected a cure; but the metallic tonics which have been advised under the head of Epilepsy, will be more likely to prove efficacious than those of the vegetable class. To tonics we may join antispasmodics, such as opium, musk, and camphor. Hyoscyamus and belladona are medicines sometimes employed in chorea.

During a use of these medicines, if costiveness prevails, it should be removed by some gentle laxative.

Should the disease resist these means, it probably may be carried off by strong electrical shocks directed through the whole body.

The application of a perpetual blister to the os sacrum has in addition to electricity been found a valuable remedy. Dry cupping has in some instances been thought to have proved useful.

Chorea has pretty generally been considered by systematic writers as a disease of debility, and this opinion has been almost universally adopted by practical physicians, inducing them to employ tonics, stimulants, and antispasmodics for its cure; but in many cases this has proved very difficult; and when not removed by the change which the system undergoes at the age of puberty, the disease has continued to harass the wretched sufferer ever afterwards. This fact being well established, we should undoubtedly regard the symptoms of chorea as sometimes depending on local irritation and not on debility, and in such cases they are to be obviated by removing the causes of irritation, by scarifying the gums, by expelling worms, or by a use of brisk purgatives. From some cases reported in the first number of the Edinburgh Medical and Surgical Journal, and which were received into the Royal Infirmary of that city, it appears that very complete cures were effected by the frequent exhibition of drastic purges consisting of mercury and jalap. Irritation in the first passages no doubt had occasioned the chorea in these instances.

A modern writer tells us,* that having met with many cases of chorea which he treated in the usual way, but without success, he was induced to desert the practice, and to consider the disease in a different light from that in which it had been commonly viewed. He conceived that the debility and spasmodic motions hitherto so much considered, might not be the leading symptoms of the disease, but might depend upon previous and increasing derangement of health, as indicated by irregular appetite and constipation of the bowels. Under this impression, he resolved to alter the mode of treating the disease, and began trying the effects of purgative medicines, given regularly in moderate doses.

The success of the new practice established, he mentions, the justness of his opinion, and encouraged him to persevere with steadiness and activity. To procure a discharge of the indurated and fetid fæces, he found it necessary to employ active and strong purgatives in the

* See Observations on the Utility of Purgative Medicines, by Dr. Hamilton.

confirmed stage of the disease, given in successive doses, in such a manner that the latter doses might support the effect of the former; but in the first stage of chorea, while the intestines yet retain their sensibility, and before the accumulation of fæces is great, gentle purgatives, repeated as occasion may require, he experienced readily to effect a cure, or rather prevent the full formation of the disease. He mentions, that an occasional stimulus from purgatives will be requisite to support their due action, and to restore their healthy tone, even after a regular appetite for food, a more intelligent eye and lightened countenance, cheerfulness, increasing aptitude for firmer motions, the restoration of articulation and the power of deglutition, and a renovation of flesh and strength, succeed each other.

Some people, particularly women in a state of pregnancy, are very subject to spasmodic contractions of the joints, coming on periodically and attended with very violent pain: for the removal of these, anodyne frictions appear to be the best remedy.

Of the SARDONIC LAUGH, or RISUS SARDONICUS.

In this disease there prevails a fit of laughing, arising from no evident cause, which continues often in a violent degree for three or four nights, so as to prevent the patient from sleeping. By its duration in this way, great debility is produced; and frequency of the pulse, and other febrile symptoms, arise. It then either proves fatal by its violence, or goes off spontaneously.

Antispasmodics, such as musk, castor, asafœtida, camphor, and æther, have usually been employed to remove the disease, but without effect, so that we are unacquainted with any remedy that will prove effectual, and the spontaneous cessation of the fit is more to be trusted to than any aid from medicine. Large doses of opium might probably afford some relief.

Of the CRAMP, or TETANUS.

Tetanus is an involuntary, and almost constant contraction of all or several of the muscles, while the senses remain perfect and entire. It may be considered as of two kinds, viz. idiopathic and symptomatic.

By practical writers, tetanic complaints have been distinguished into opisthotonos, emprosthotonos, and trismus, in allusion to the situation of the parts affected; but they are all evidently only different degrees of one and the same disease.

These affections arise more frequently in warm climates than in cold ones, and are very apt to occur there when much rain or moisture quickly succeeds excessively dry and sultry weather. They attack persons of both sexes, of all ages, temperaments, and complexions, but the male sex more frequently than the female, and those of a robust and

vigorous constitution oftener than those of a weak habit. An idea is entertained by many, that negroes are more predisposed to attacks of tetanus than white people: they certainly are more frequently afflicted with it; but this circumstance does not arise from any constitutional predisposition, but from their being more exposed to punctures and wounds in the feet, by nails, splinters of wood, pieces of broken glass, &c. from going usually barefooted.

Tetanic affections are occasioned either by exposures to cold when under profuse perspiration, sleeping in the open air on damp ground, or by some irritation of the nerves, in consequence of local injury by puncture, incision, or laceration. Lacerated wounds of tendinous parts prove, in warm climates, a never-failing source of these complaints. In cold climates, as well as in warm ones, the locked-jaw, or trismus, frequently arises in consequence of various surgical operations, particularly the amputation of a limb, or of gun-shot wounds. Some cases have been recorded where trismus was supposed to be owing to the presence of worms in the intestinal canal.

When the disease has arisen in consequence of a puncture, or any other external injury, the symptoms shew themselves generally about the eighth day; but when it proceeds from an exposure to cold, they generally make their appearance much sooner.

In some instances tetanus comes on suddenly, and with great violence; but it more usually makes its attack in a gradual manner; in which case a slight stiffness is at first perceived in the back part of the neck, which, after a short time, becomes considerably increased, and at length renders the motion of the head both difficult and painful.

With the rigidity of the head, there is likewise an uneasy sensation at the root of the tongue, together with some difficulty of swallowing, and a great tightness is perceived about the chest, with a pain at the extremity of the sternum shooting into the back. A stiffness also takes place in the jaws, which soon increases to such a height that the teeth become so closely set together as not to admit of the smallest opening. When the tetanic affection is confined to the jaws, the disease is called trismus.

In some cases the spasmodic affection extends no farther: in others, the spasms at this stage of the disease returning with great frequency, become likewise more general, and now affect not only the muscles of the neck and jaws, but likewise those of the whole of the spine, so as to bend the trunk of the body very forcibly backwards, and this is what is named opisthotonos. Where the body is bent forwards, the disease is called emprosthotonos.

During the whole course of the disorder, the abdominal muscles are violently affected with spasm, so that the belly is strongly retracted, and feels very hard, most obstinate costiveness prevails, and both the flexor and extensor muscles of the lower extremities are commonly affected at the same time, so as to keep the limbs rigidly extended.

The flexors of the head and trunk become at length so strongly affected, as to balance the action of the extensors, and to keep the head

and trunk so rigidly extended and straight as to render it incapable of being moved in any direction. The arms, which were little affected before, are now likewise rigidly extended, the tongue also becomes affected with spasm, and being convulsively darted out, is often much injured by the teeth at that moment snapping together. It is to this state of the disease that the term of tetanus has been strictly applied.

The disorder continuing to advance, every organ of voluntary motion becomes affected, the eyes are rigid and immoveable in their sockets, the countenance is hideously distorted, and expresses great distress, the strength is exhausted, the pulse becomes irregular, and one universal spasm puts a period to a most miserable state of existence.

Attacks of tetanus are seldom attended with any fever, but always with violent pain, and the spasms do not continue for a constancy, but the muscles admit of some remission in their contraction, which is renewed every ten or fifteen minutes, especially if the patient makes the least attempt to speak, drink, or alter his position.

When tetanic affections arise in consequence of a wound, puncture, or laceration, they are almost sure to prove fatal, as I never but once met with a recovery under such circumstances, during a very extensive practice and long residence in the West Indies. The locked-jaw arising in consequence of an amputation, or gun-shot wounds, likewise proves usually fatal. When these affections are produced by an exposure to cold, they may in most cases be removed by a timely use of proper remedies, notwithstanding a considerable space will probably elapse before the patient will be able to regain his former strength. Although there is sometimes a great abatement of the spasms in tetanus, still they are apt to return with renovated force. In some cases, the patient is destroyed in four days; in others, he may linger for a fortnight.

On dissections of this disease, slight effusions within the cranium have been observed in a few instances; but in by far the greater number nothing particular has been discovered either in the brain or any other organ. In some instances, however, the blood is not found in coagula, but fluid like molasses, as in animals killed by lightning, appearing to indicate, that the whole muscular fibres of the arterial system had partaken of the general spasmodic action.

Although our endeavours may not be crowned with success, where tetanus arises from a lacerated wound, or a puncture in some tendinous part, still we should by no means suffer the patient to remain in so miserable a state of existence, without making some efforts to afford even a temporary relief or alleviation of his sufferings.

On being applied to for advice, the practitioner should therefore endeavour, in the first place, to find out the cause which has given rise to the disease. If supposed to proceed from a wound or puncture, he ought carefully to examine the injured part, and to extract, as quickly as possible, any extraneous body that may have lodged therein, taking care, at the same time, to dilate the wound to a sufficient size, in order that the dressings may afterwards be applied in close contact with it.

These steps being taken, it may possibly be attended with some advantage to pour a small quantity of a strong solution of opium into the wound, dressing it afterwards with a little lint dipped in the same, and laying a pledget spread with some digestive ointment over the whole. Every time the dressings are renewed, the wound is again to be wetted with the solution.

The partial division of a nerve being sometimes supposed to occasion tetanic affections, the practitioner ought, when this is suspected to be the case, to make a deep incision into the part which has been injured, so as to divide the tendinous and nervous fibres entirely, after which he should adopt the mode of treatment that has just been recommended.

Pencilling the wound freely with lunar caustic, and afterwards covering it with a poultice of bread and milk, with the view to obtain suppuration as soon as possible, is another mode of proceeding which has been pursued in tetanus arising from external injury.

Dr. Darwin recommends* the wound to be dilated, and then to fill it with lint moistened with spirits of turpentine, which brings on an inflammation in it, and thereby cures or prevents the convulsions.

Opium is the medicine which has been employed with the best effect in all cases of tetanus; but it should always be given in moderate doses at first, and so be increased gradually. In administering opium in this disease, the attention must, however, be directed to the effect that it produces on the patient, and not to the quantity which is taken, as many cases are on record, where an ounce of it in substance has been given in the course of twenty-four hours, the spasms having been very frequent and violent.

By many it has been supposed, that joining it with musk and camphor, has greatly added to its effect. A combination of these medicines (as in the formula below†) had therefore best be used, taking care to increase the quantity of opium in each succeeding dose.

Giving the mild alkali internally, and administering opium at the same time in alternate doses, together with the use of a hot bath, impregnated with kali, and a few ounces of quick-lime, is a mode of treatment much recommended by Dr. Stutz, of Suabia, in tetanus and trismus traumaticus.‡

An alternate internal use of opium and carbonate of potash, is said to have been employed in the hospitals of Germany among the wounded soldiers in the late war with a most happy effect. The remedy is therefore worthy of our attention in tetanic affections.

* See Zoonomia, vol. iv. page 47.

‡ See Medical and Physical Journal, vol. iii. p. 572, and vol. v. p. 472.

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† ℞. Moschi gr. xv.
Spirit. Cinnam. ʒij.
Mistur. Camphorat. ℥jss.
Tinct. Opii gutt. xxxv. M.
fr. Haustus 3tia vel 4ta hora sumendus.

In those cases where the jaws are so firmly locked together as to prevent a spoon from being introduced between them, and where the teeth are quite perfect in front, it will be necessary to extract some of them, for the purpose of giving the patient his medicines and food. When he loses the power of deglutition, opium is then to be administered in clysters.

Besides giving opium internally, it may likewise be employed externally, by rubbing the parts frequently which are most affected by spasm, with equal parts of the linimentum saponis and tinctura opii, or with the ointments prescribed below.*

This mode of introducing opium into the system will more particularly be necessary where the patient loses the power of swallowing, and by being applied to the parts immediately affected, promises fair for affording essential relief.

Dr. Mosely asserts,† that opiates applied externally are not of the smallest utility either in the prevention or cure of tetanus. In this I must beg leave to differ from him, as during my practice in the West Indies, I met with many instances where the most evident advantages were derived by using it in this way.

To procure a relaxation of the spasms, it has been customary to make use of a warm bath; but in all the instances of a recovery from tetanus which have taken place under my care, the cold bath was substituted instead of the warm. These, however, were cases (one excepted) which arose from exposures to cold. The plan generally pursued was, to throw a large pailful of cold water every two hours on the patient, after which he was wiped dry, and again put into bed; an opiate draught, similar to what has been advised, was then given to him, and the parts most affected were well rubbed with a strong anodyne liniment. When he was so far recovered as to be able to swallow with facility, the Peruvian bark was given to him with a very free allowance of wine; which course was pursued for a considerable time after the spasmodic affection had ceased.

It has been recommended by some physicians to endeavour to excite a salivation by using mercury both internally and externally; but I must say, I never found it answer. My trials of it were however few; for having experienced the method which I have recommended to be so very successful, in almost every instance where the disease arose from an exposure to cold, I should not have thought myself justified in losing time by using any remedy which was attended with uncertainty.

Where mercury is employed in the cure of tetanus with the view of exciting a salivation, the patient should be put now and then into a warm bath; and that he may have every chance of recovering, I would recommend a joint use of opium at the same time.

† See his Treatise on Tropical Diseases, p. 494.

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* ℞. Opii Purif. Pulv. Subtilis. ʒj.
Camphor. gr. xv.
Adipis Suillæ ʒfs. M.
ft. Unguentum.

Vel

℞. Adipis Suillæ Præparat. ʒj.
Olei Succin. Rectificat. ʒfs.
Opii Pulverisat. ʒij. M.

In the Transactions of the College of Physicians of Philadelphia, vol. i. part 1, is inserted a case of tetanus, from the extraction of two teeth, which was successfully treated by Dr. Rush, by a use of mercury and wine; and others are elsewhere recorded on indisputable authorities.

In the New-York Medical Repository for 1799, is mentioned another case of tetanus arising from the puncture of a pin in the wrist, which was successfully treated by Dr. Hosack with wine (Madeira) *alone;* the woman having taken three gallons in a few days, in doses of a wine-glassful (containing about two ounces) every hour. It seems necessary to observe however, that in this case the wound was freely pencilled with lunar caustic, after which it was covered with an emollient poultice.

In those affections where inflammation of the system might be of service, Dr. Darwin thinks wine might be preferable to opium. He mentions that he has observed a mixture of spirits of wine and warm water, given alternately with the doses of opium, has soonest and most certainly produced that degree of intoxication which was necessary to relieve the patient in the epilepsia dolorifica.*

Dr. James Clark, in his Treatise on West India Diseases, informs us, that, being unable to cure the symptomatic tetanus, he endeavoured to prevent it, and for this purpose, after wounds and punctures, he gave two or three grains of calomel twice a day till a gentle salivation came on, and he pursued the same plan after operations. Out of fifteen patients, after amputation, that were treated in this way, only one died, and he was in so irritable a state before, that bad consequences were dreaded. In those who had been wounded or punctured, the success was greater; two only having been lost, out of a great number, since this mode of practice was begun.

Dr. Donald Munro, in the third volume of the Edinburgh Physical and Literary Essays, has reported several cases of tetanus that were communicated to him by a physician who had practised many years in the island of Jamaica, which were perfectly cured by exciting a salivation. It is necessary to mention, however, that not one of these had arisen in consequence of a puncture, wound, or any other external injury, but were all occasioned by exposures to cold.

To prevent tetanic affections from arising after wounds and chirurgical operations, I understand it is almost an universal practice on board of ships of war, to mix tincture of opium with the dressings, and that since this practice has been adopted, these complaints seldom occur. As a prophylactic, I should be much inclined to adopt this mode of treatment in preference to that proposed by Dr. Clark.

When the disease has proceeded from an exposure to cold, it is apt to be attended with some slight inflammatory symptoms; to remove which, bleeding is sometimes had recourse to, but it usually proves injurious instead of beneficial.

As costiveness is a constant attendant on tetanus, it should be ob-

* See Zoonomia, vol. ii. p. 431.

viated by the frequent exhibition of active aperients,* while the power of swallowing remains; and after it has ceased, by the regular exhibition of clysters.

Among the remedies of tetanus, it may be proper to mention the oleum petrolei, or Barbadoes tar, which, by being taken internally, has been said in some instances to have effected a cure.

Electricity is reported to have been lately employed in some cases of the locked jaw, with a happy effect. The remedy seems deserving of further trials.

Throughout the whole course of all tetanic affections, the patient's strength is to be supported by wine, mixed with such things as he can easily swallow; and where this power ceases, nutritive clysters must be substituted.

The trismus nascentium is a species of tetanus; but this is inserted among the diseases peculiar to infants.

Of the HICCUPS, or SINGULTUS.

HICCUPS are a spasmodic affection of the stomach and diaphragm, arising from some peculiar irritation. They are in general symptomatic, but in some instances they appear as a primary disease.

When they are idiopathic, they usually arise from an error in diet, or from an acidity in the stomach. When symptomatic, they either come on towards the termination of some acute disease, attend on injuries done to the stomach and other viscera, or prevail as an hysteric affection.

Hiccups prevailing as a primary affection, are never attended with danger, and are in general easily removed; but when they arise in any acute disorder, or after a mortification has taken place, they may always be looked upon as the forerunners of death.

The appearances on dissection will depend entirely on the disease of which they have appeared as a symptom.

A common hiccup is often removed by taking a few small draughts of cold water, in quick succession, or by a sudden excitement of some degree of fear or surprise. When these simple means do not answer, recourse must be had to antispasmodics, the most useful of which for this disease, seem to be æther, musk, and opium. These may either be combined together, or be given separately.

In the accidental hiccup of youth or of very old people, a pretty certain remedy is a small quantity of any powerful acid, such as a tea-

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* ℞. Ol. Ricini
Mucil. Gum. Arab. āā ℥ß
Aq. Fervent. ℥j.
Kali Tartarisat. ℥ij. M.
ft. Haustus.

℞. Infus. Sennæ ℥jſs.
Natri Vitriolat. ℥ſs.
Tinct. Jalapii ℥ſs.
Syrup. Rosæ ℥ij. M.
ft. Haustus.

spoonful of vinegar or lemon-juice, or a little peppermint-water acidulated with a few drops of sulphuric acid.

Where hiccups prove violent as well as obstinate, the application of a large plaster of Venice treacle to the patient's stomach, sometimes affords relief; but should it fail, a blister may then be substituted.

Hiccups sometimes proceed from an acidity in the stomach, and hence it is that infants are very apt to be affected with them. When they arise from this cause, a little prepared chalk or magnesia joined with some carminative, such as the oleum anisi, will be the most proper medicine.

When hiccups arise at the close of any acute or malignant disease, or in consequence of a mortification, no advantage can be obtained from medicine, or any other means whatever.

Of the HOOPING COUGH, or PERTUSSIS.

THIS is a convulsive cough, interrupted by a full and noisy inspiration, and returning in fits that are usually terminated by a vomiting.

Children are most commonly the subjects of this disease, and it seems to depend on a specific contagion, which affects them but once in their life. The disease being produced, the fits of coughing are often repeated without any evident cause; but in many cases, the contagion may be considered as only giving the predisposition, and the frequency of the fits may depend upon various exciting causes, such as violent exercise, a full meal, the having taken food of difficult digestion, and irritation of the lungs by dust, smoke, or disagreeable odours. Emotions of the mind may likewise prove an exciting cause.

Its proximate or immediate cause seems to be a viscid matter or phlegm lodged upon the bronchiæ, trachea, and fauces, which sticks so close as to be expectorated with the greatest difficulty. Some have supposed it to be a morbid irritability of the stomach, with increased actions of its mucous glands; but the affection of the stomach which takes place in the disease, is clearly only of a secondary nature, so that this opinion must be erroneous.

The hooping cough usually comes on with an oppression of breathing, some degree of thirst, a quick pulse, and other slight febrile symptoms, which are succeeded by a hoarseness, cough, and difficulty of expectoration. These symptoms continue, perhaps, for a fortnight or more, at the end of which time the disease puts on its peculiar and characteristic form, and is now evident, as the cough becomes convulsive, and is attended with a peculiar sound, which has been called a hoop.

When the sonorous inspiration has happened, the coughing is again renewed, and continues in the same manner as before, till either a quantity of mucus is thrown up from the lungs, or the contents of the stomach are evacuated by vomiting. The fit is then terminated, and the patient remains free from any other for some time, and shortly after-

wards returns to the amusements he was employed in before the accession of the fit, expresses a desire for food, and when it is given to him, takes it greedily. In those cases, however, where the attack has been severe, he often seems much fatigued, makes quick inspirations, and is rather faint.

On the first coming on of the disease, there is little or no expectoration, or, if any, it consists only of thin mucus; and as long as this is the case, the fits of coughing are frequent, and of considerable duration; but on the expectoration becoming free and copious, the fits of coughing are less frequent, as well as of shorter continuance.

By the violence of coughing, the free transmission of blood through the lungs is somewhat interrupted, as likewise the free return of the blood from the head, which produces that turgescence and suffusion of the face which commonly attend the attack, and in some instances brings on a hemorrhage either from the nose or ears.

The disease having arrived at its height, usually continues for some weeks longer, and at length goes off gradually. In some cases, it is, however, protracted for several months, or even a year.

Although the hooping cough often proves tedious, and is liable to return with violence on any fresh exposure to cold, when not entirely removed, it nevertheless is seldom fatal, except to very young children, who are always likely to suffer more from it than those of a more advanced age. The danger seems indeed always to be in proportion to the youth of the person, and the degree of fever and difficulty of breathing which accompany the disease, as likewise the state of debility which prevails.

It has been known in some instances to terminate in apoplexy and suffocation. In the predisposed, it lays the foundation for asthma, scrofula, and phthisis pulmonalis. If the fits are put an end to by vomiting, it may be regarded as a favourable symptom, as may likewise the taking place of a moderate and free expectoration, or the ensuing of a slight hemorrhage from the nose or ears.

Dissections of those who die of the hooping cough, usually shew the consequence of the organs of respiration having been affected, and particularly those parts which are the seat of catarrh. When the disease has been long protracted, it is apt to degenerate into pulmonary consumption, asthma, or visceral obstructions, in which last case the glands of the mesentery are found in a hard and enlarged state.

Where the disease takes place in a child of a full plethoric habit, and is accompanied with a difficulty of breathing, full pulse, and other febrile symptoms, it may probably be attended with advantage to take away a small quantity of blood, and this will be done best, by applying a sufficient number of leeches either to the neck or chest; which operation may be repeated after a time, if the degree of dyspnœa is not lessened; but in common cases, where no such symptoms prevail, bleeding of any kind will not be necessary.

In those cases where there is much difficulty of breathing, the appli-

cation of a blister to the chest will likewise be highly proper at the commencement of the disease.

Some practitioners have recommended the lower region of the stomach to be rubbed very frequently with a stimulating embrocation,* covering the part afterwards with flannel. Inhaling the steam of warm water with an addition of vinegar or æther twice or thrice a day, may also be of service.

The body being usually very costive, it will be necessary to have recourse to gentle laxatives to remove it. In many instances, an attention to diet may probably be sufficient to answer the purpose of removing or preventing this symptom; and therefore stewed prunes, roasted apples, &c. may be given, which things children take very readily.

Emetics administered frequently, have been found the most useful of all remedies in hooping cough, for which reason they ought never to be neglected; and as children may easily be deceived by what has no appearance of medicine, a solution of tartarised antimony† seems the most proper for the occasion. The best way, however, will be to give about a table-spoonful every fifteen minutes or so, until it takes effect, as dangerous consequences might ensue from the medicine happening to operate harshly, and producing much vomiting, which in some cases a very small quantity of it is apt to do. Where the patient is grown up to an adult state, an emetic of oxymel of squills may be substituted.

Bathing the feet frequently in warm water, has been supposed to afford relief in many cases.

The acetite of lead has been lately recommended in the hooping cough, and is said to relieve the symptoms of the disease very speedily, without producing any bad effects on the stomach and bowels. It may be given as in the formulæ inserted below.‡

For obviating the fatal tendency of the disease, and putting it into a safe train, the remedies which have been advised are evidently the most proper; but in its second stage, where it may be considered as continuing from the power of habit alone, all danger and violence being over, we must alter the plan of treatment, and have recourse to antispasmodics and tonics.

Of the first class, musk, castor, asafœtida, oleum succini rect., camphor, and opium, have principally been used; but their effects seem rather doubtful, and as they are all nauseous medicines, particularly the three first, it may not be easy to persuade children to take them.

The uncertainty of the dose of opium, as well as the inconvenient

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* ℞. Antimon. Tartarisat. ℈j.
Aq. Puræ ℥ij.
Tinct. Cantharid. ℥ss. M.

† ℞. Antimon. Tartarisat. gr. iij.
Aq. Puræ ℥vj.
Syr. Simpl. ℥ij. M.

‡ ℞. Cerussæ Acetat. gr. ij.—v.
Aq. Rosæ ℥ij.
Syrup. Violæ ℥ij. M.
ft. Mistura.
Capiat Cochl. parvulum 4tia vel 5ta quaque hora.

effects produced by it on children, operate somewhat against the internal use of this drug, but its external use promises much benefit. In order to disguise tincture of opium, a few drops of æther may be added, and in this way it may be employed as an embrocation twice or thrice a day over the chest and stomach.

Artificial musk is a medicine which is reported to have been given in the hooping cough with the most decided advantage, even when other remedies have failed. A small quantity may be dissolved in a little alcohol, and about three or four drops be given twice a day, gradually increasing the dose to six, thrice in the twenty-four hours.

Hemlock having been considered as an antispasmodic, has been administered in this disease, and frequently with considerable success. In a few cases where I made trial of it, some advantage seemed to be obtained from its use; but as I gave it combined with other remedies as below,* probably it was not entitled to the whole merit.

The tincture of digitalis is another medicine which has of late been recommended in the hooping cough. I have prescribed it in a few cases with seeming advantage. Combining it with opium might, perhaps, increase its efficacy. Hyoscyamus has likewise been proposed.

Exciting a slight degree of strangury has been attended with a good effect in some instances of this disease. A combination of tinctura cantharidis, and tinctura opii camphorata,† may be used for this purpose, giving it in doses of about twenty drops repeated every three or four hours, until some slight effect of this nature is produced; when the dose may either be lessened, or be given at longer intervals. Its efficacy is owing to the counter-irritation excited by it.

In order to take off the irritation from the mucous membrane, which is the principal seat of the disease, as well as to strengthen the general habit, it will be advisable to employ the Peruvian bark, and other tonic medicines. It may be given joined with the other remedies, as in the annexed prescription ;‡ and as it is often impossible to persuade children to take it in substance, we must be content with substituting a decoction, or strong infusion of it.

Arsenic has lately been recommended in pertussis by Mr. Simmons of Manchester ;§ and he asserts that it is attended with the most salutary effects, moderating the symptoms in a few days, and generally making a complete cure in the space of a fortnight. It has been given to children of a year old with safety, in the doses recommended by Dr. Fowler of York, (see Intermittents,) whose solution was used. It appears however, that Mr. Simmons employed venesection and emetics

§ See Annals of Medicine for 1797.

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* ℞. Extract. Cicutæ gr. j.—ij.
Decoct. Cort. Peruv. ℥j.
Tinct. Opii gutt. v. M.
fiat Hauſtus ter in die sumendus.

† ℞. Tinct. Opii Camphorat. ℥j.
———Cantharidis ℥ij. M.

‡ ℞. Decoct. Cinchon. ℥iijſs.
Tinct. Opii Camph. ℥ſs.
———Cantharid. gutt. xl. M.
Capiat Cochl. j—ij. quartis horis.

occasionally; and he recommends, after the solution has been omitted for a week, to repeat it, in order to guard against a relapse.

A frequent change of air having always been found very serviceable in this disease, ought therefore to be advised. A flannel waistcoat should be worn by the patient, as no doubt it promotes absorption, and prevents the vicissitudes of the climate taking that effect on the skin, which we know it does, acting thereby as an exciting cause of coughing.

Young children should lie with their head and shoulders raised, and should be cautiously watched, that, when the cough occurs, they may be held up, so as to stand upon their feet, bending a little forwards. Their diet should be light and of easy digestion, and mucilaginous diluents should be taken freely.

Of the WATER-BRASH, or PYROSIS.

A DISCHARGE of a thin, watery, or glairy fluid from the stomach, with eructations, and likewise a sense of burning heat in the epigastric region, are the chief characteristics of this disease.

It principally attacks those of a middle age, and more frequently affects females than males, particularly the unmarried. Those who are afflicted with fluor albus have been found to be much predisposed to it.

Being a disease not much known, and occurring but seldom, its causes have not been properly ascertained, but a low diet has been ascribed, as being apt to give rise to it. The application of cold to the lower extremities, and violent emotions of the mind, are likewise enumerated among its occasional causes.

The fits of pyrosis usually come on in the morning and forenoon, when the stomach is empty; and the first symptom which the patient perceives, is a pain at the pit of the stomach, with a sense of constriction, as if it was drawn towards the back, and this is usually much increased by an erect posture. The pain, after proving severe, and continuing for some time, is followed by eructations, and the discharge of a considerable quantity of a thin watery fluid. In some instances, however, it is very ropy, and of an appearance somewhat similar to the white of an egg, as happened in a case which some time ago came under my observation.

On a frequent repetition of the eructation and discharge, the fit at length goes off. It is seldom that any of the symptoms of dyspepsia attend on it.

This disease never proves fatal, but is often tedious, and troublesome to remove, being apt to recur occasionally, a long time after it has once taken place.

For its cure, no certain method has yet been proposed; but its fits are relieved by antispasmodics, such as æther, musk, castor, volatile alkali, oleum cajeputæ, and opium. In the intervals, the cinchona, with the acidum sulphuricum, and chalybeates, will be advisable.

In pyrosis as well as in gastrodynia and other like affections of the stomach the oxyd of bismuth has been found to afford much relief, interposing now and then gentle aperients. It appears to be a remedy recommended on the ground of safety as well as utility. An adult may take five grains of it with about a scruple of gum tragacanth three times a day.

A case of pyrosis, accompanied by gastrodynia of a year's standing, is recorded in Dr. Bardsley's Medical Reports, which was effectually removed by the oxyd of bismuth in a very short time. The complaint had been so constant and severe as to prevent the patient from following his occupation as a weaver. The pain was fixed and dull, and the quantity of acid discharged from the stomach, in a watery form, was abundant. After clearing the stomach with an active emetic, the bowels were emptied by castor oil, and the patient then entered upon the bismuth. He took twenty grains of a powder, consisting of one part of the oxyd and five of gum tragacanth thrice a day for the space of a week, and then increased the dose gradually to forty grains. A short time effected the removal of the pyrosis. The bismuth was then discontinued, and the bark with sulphuric acid substituted, which soon completed the cure. It appears likewise, that some other cases of pyrosis, accompanied with spasmodic pains, were treated with uniform success.

Linnæus, by whom the disease seems first to have been noticed, recommends a use of the nux vomica; the dose is from ten grains to a scruple three times a day. Chewing tobacco has been known to effect a cure; probably, smoking it might be attended with a still better effect.

The case which I have just alluded to in the preceding page was at first treated with antispasmodics; but these being attended with no good effect, the physician who was called in advised the use of vitriolated zinc combined with opium and the extract of Peruvian bark, which seemed at first to be wonderfully efficacious; but the disease shortly afterwards returned, and the patient having lost confidence in the remedy, it was discontinued.

Of ANGINA PECTORIS.

AN acute constrictory pain at the lower end of the sternum, inclining rather on the left side and extending up into the left arm, accompanied with great anxiety, violent palpitations at the heart, laborious breathing, and a sense of suffocation, are the characteristic symptoms of this disease.

It is found to attack men much more frequently than women, particularly those who have short necks, who are inclinable to corpulency, and who at the same time lead an inactive or sedentary life. Although it is sometimes met with in persons under the age of twenty, still it more frequently occurs in those who are between forty and fifty.

In slight cases, and in the first stage of the disorder, the fit comes on by going up hill, up stairs, or by walking at a quick pace after a hearty meal; but as the disease advances, or becomes more violent, the paroxysms are apt to be excited by certain passions of the mind; by slow walking, by riding on horseback or in a carriage, or by sneezing, coughing, speaking, or straining at stool. In some cases they attack the patient from two to four in the morning, or while sitting or standing, without any previous exertion or obvious cause. On a sudden, he is seized with an acute pain in the breast, or rather at the extremity of the sternum, inclining to the left side, and extending up into the arm as far as the insertion of the deltoid muscle, accompanied by a sense of suffocation, great anxiety, and an idea that its continuance or increase would certainly be fatal.

In the first stage of the disease the uneasy sensation at the end of the sternum, with the other unpleasant symptoms which seemed to threaten a total suspension of life by a perseverance in exertion, usually go off upon the person's standing still, or turning from the wind; but in a more advanced stage, they do not so readily recede, and the paroxysms are much more violent. During the fit the pulse sinks in a greater degree, and becomes irregular, the face and extremities are pale, and bathed in a cold sweat, and for a while, the patient is, perhaps, deprived of the powers of sense and voluntary motion. The disease having recurred more or less frequently during the space of some years, a violent attack at last puts a sudden period to his existence.

Angina pectoris had passed unnoticed among practitioners until Dr. Heberden published a description of it about forty-five years ago in the Transactions of the College of Physicians of London; since which, many gentlemen of eminence in their profession have attempted to investigate its nature, and have obliged us with their observations. By most of them it has been judged spasmodic. Dr. Parry, physician to the Bath General Hospital, who is the last author that has published his sentiments on it, is of opinion, however, that it is in reality a case of fainting or syncope, which Dr. Cullen defines "motus cordis imminutus, vel aliquamdiu quiescens;" and as differing from the common syncope only, in being preceded by an unusual degree of anxiety or pain in the region of the heart, and in being readily excited, during a state of apparent health, by any general exertion of the muscles, more especially that of walking. The supposed cause of angina pectoris (for which he has thought proper to substitute the name of syncope anginosa) is referred by him to a diseased state (generally ossification) of the coronary arteries of the heart.

The rigidity of the coronary arteries, thus induced, may act, he thinks, proportionably to the extent of the ossification, as a mechanical impediment to the free motion of the heart; and though a quantity of blood may circulate through these arteries, sufficient to nourish the heart, as appears in some instances, from the size and firmness of that organ, yet there may probably be less than what is requisite for ready and vigorous action. Hence, though a heart so diseased may be fit for the purposes of common circulation, during a state of bodily and mental tranquillity,

and of health otherwise good; yet, when any unusual exertion is required, its powers may fail under the new and extraordinary demand. In conformity with this notion, Dr. Parry endeavours to shew that the chief symptoms of the disease are the effect of blood retarded and accumulated in the cavities of the heart and neighbouring large vessels; and that the causes exciting the paroxysms, are those which produce this accumulation; either by mechanical pressure, or by stimulating in an excessive degree, the circulating system; in consequence of which, the heart, weakened by the mal-organization, readily sinks into a state of quiescence, while the blood continues to advance in the veins. After this quiescence has continued for a certain period, the heart may recover its irritability, so as again to carry on the circulation in a more or less perfect degree, from the operation of the usual stimuli; or death may at length ensue, from a remediless degree of irritability in the heart.

Such is Dr. Parry's theory. In objection to it, it may, however, be urged, that dissections of many of the cases of angina pectoris, which have terminated fatally, have not discovered any morbid appearances in the heart or its appendages, so that ossification of the coronary arteries cannot be the sole cause of this disease. In a few instances, such a state in these vessels has indeed been observed, but the occurrence is by no means general or even frequent. Neither have the lungs been discovered on dissection to be at all altered. In one or two cases, the blood was observed not to coagulate, but to remain of a cream-like consistence, without any separation into serum or crassamentum.

We should always consider angina pectoris as attended with a considerable degree of danger, and it usually happens that the person is carried off suddenly. When it really depends upon an ossification of the coronary arteries, it is evident that we can never expect to effect a cure.

During the paroxysms, considerable relief is to be obtained from bloodletting, and from administering powerful antispasmodics, such as opium and æther combined together.* The application of a blister to the breast is likewise attended sometimes with a good effect.

Two remarkable cases of this disease are recorded in the sixth volume of the Medical and Physical Journal, which were cured by applying pieces of calico to the sternum, wetted with a solution of tartarised antimony, in the proportions mentioned below,† several times a day. The stimulus from this application produced an uncommon and violent eruption on the skin in a short time, having the peculiar malignant appearance of carbuncles, itching and smarting excessively, many of which suppurated, while hundreds were continually rising up, some as large as peas, others as small as pins heads. As soon as the erup-

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* ℞. Aq. Anethi ℥jfs.
Æther. Sulphuric. gutt. xxx.
Tinct. Opii gutt. xv.—xx.
——— Lav. C. gutt. xx. M.
ft. Hauſtus 4ta quaq. hora repetendus.

† ℞. Antimon. Tartar. ℈j.
Spirit. Camphorat. ℥ſs.
Aq. Fervent. ℔j. M.

tion appeared, considerable relief from the spasmodic affections was obtained in both instances, and the patients went on gradually recovering, after continuing the remedy two or three times a day for about a month.

As the painful sensation at the extremity of the sternum often admits of a temporary relief from an evacuation of wind by the mouth, it may be proper to give moderate doses of carminatives, such as the aqua menth. pip. aqua pimento, or spiritus carui. Where these fail in the desired effect, a few drops of the oleum anisi on a little sugar may be substituted.

With the view of preventing the recurrence of the disorder, the patient should carefully guard against passion or other emotions of the mind; he should use a light generous diet, avoiding every thing of a heating nature, as spices, spirits, wines, and fermented liquors, and he should take care never to overload the stomach, or to use any kind of exercise immediately after eating. Besides these precautions, he should endeavor to counteract any disposition to obesity, which has been considered as a predisposing cause; and this is to be effected most safely by a vegetable diet, moderate exercise at proper times, early rising, and keeping the body perfectly open, with laxative medicines.

To establish the general health, and remove the mobility or excitability of the system, tonics, particularly the metallic ones, together with antispasmodics, may be given in the same manner as recommended under the head of Epilepsy.

It has been observed, that angina pectoris is a disease always attended with considerable danger, and in many instances has proved fatal under every mode of treatment. We are given, however, to understand by Dr. Macbride,* that of late, several cases of it have been treated with great success, and the disease radically removed, by inserting a large issue in each thigh. These, therefore, should never be neglected. In one case, with the view of correcting or draining off the irritating fluid, he ordered, instead of issues, a mixture of lime-water with a little of the spiritus juniperi comp. and an alterative proportion of Huxham's antimonial wine, together with a plain, light, perspirable diet. From this course, the patient was soon apparently mended; but it was not until after the insertion of a large issue in each thigh, that he was restored to perfect health.

Dr. Darwin likewise makes mention† that four patients who laboured under the angina pectoris in a severe degree, were all recovered, and continued well three or four years, by the use (as he believes) of issues on the inside of each thigh, being large enough at first to contain two peas each, but afterwards only one. They took besides some slight antimonial medicine for a short time.

* See Medical Observations and Inquiries, vol. vi.
† See Zoonomia, vol. iv. p. 43.

Of PALPITATION, or PALPITATIO.

THIS disease consists in a vehement and irregular motion of the heart, and is induced by organic affections, a morbid enlargement of the heart itself, or of the large vessels, plethora, debility or mobility of the system, mal-conformation of the thorax, and many of the causes inducing syncope.

During the attacks, the motion of the heart is performed with greater rapidity, and generally with more force than usual, which is not only to be felt with the hand, but may often be perceived by the eye, and in a few instances even be heard; there is frequently dyspnœa, a purplish hue of the lips and cheeks, and a great variety of anxious and painful sensations.

In some instances the complaint has terminated in death, but in many others it is merely symptomatic of hysteria and other nervous disorders.

In the treatment of this disease, it should be our study, if possible, to find out the exciting cause, and to remove this. If it arises from plethora, bleeding with purgatives and the rest of the antiphlogistic course should be adopted; if from debility, bitters with chalybeates and cold bathing, &c. will be proper; when symptomatic of any nervous disorder, æther, castor, musk, and other antispasmodics, conjoined with tonics, will be advisable.

As the disease, however, arises from an organic affection of the heart itself in many instances, or of the aorta, or other large vessels connected with it, all that may be in our power in such cases will be to caution the patient against exposing herself or himself to such circumstances as may increase the action of the sanguiferous system, particularly fits of passion, sudden surprises, violent exercise, or great exertions of the body.

Of ASTHMA.

THIS disease is a spasmodic affection of the lungs, which comes on by fits, and is attended by a frequent, difficult, and short respiration, together with a wheezing noise, tightness across the chest, and a cough; all of which symptoms are much increased when the patient is in an horizontal position.

Asthma rarely appears before the age of puberty, and seems to attack men more frequently than women, particularly those of a full habit, in whom it never fails, by frequent repetition, to occasion some degree of emaciation. Dyspepsia always prevails, and appears to be a very prominent feature in the predisposition. Its attacks are most frequent during the heats of summer in the dog-days, and in general commence at midnight.

When the disease is attended with an accumulation and discharge of humours from the lungs, it is called the humid asthma; but when it is

unaccompanied by any expectoration, it is known by the name of the dry or spasmodic asthma.

On the evening preceding an attack of asthma the spirits are often much affected, and the person experiences a sense of fulness about the stomach, with lassitude, drowsiness, and a pain in the head. On the approach of the succeeding evening he perceives a sense of tightness and stricture across the breast, and a sense of straitness in the lungs impeding respiration. The difficulty of breathing continuing to increase for some length of time, both inspiration and expiration are performed slowly, and with a wheezing noise; the speech becomes difficult and uneasy, a propensity to coughing succeeds, and the patient can no longer remain in an horizontal position, being as it were threatened with immediate suffocation.

These symptoms usually continue till towards the approach of morning, and then a remission commonly takes place; the breathing becomes less laborious and more full, and the person speaks and coughs with greater ease. If the cough is attended with an expectoration of mucus, he experiences much relief, and soon falls asleep.

When he awakes in the morning, he still feels some degree of tightness across his breast, although his breathing is probably more free and easy, and he cannot bear the least motion without rendering this more difficult and uneasy; neither can he continue in bed, unless his head and shoulders are raised to a considerable height.

Towards evening he again becomes drowsy, is much troubled with flatulency in the stomach, and perceives a return of the difficulty of breathing, which continues to increase gradually, till it becomes as violent as on the night before.

After some nights passed in this way, the fits at length moderate, and suffer more considerable remissions, particularly when they are attended by a copious expectoration in the mornings, and that this continues from time to time throughout the day; and the disease going off at last, the patient enjoys his usual rest by night without further disturbance.

During the fits the pulse is not usually much affected, but in a few cases there is a frequency of it with some degree of thirst, and other febrile symptoms. In some persons the face becomes turgid and flushed during the continuance of the fit, but more commonly it is pale and shrunk. Urine voided at the beginning of a fit is generally in considerable quantity, and with little colour or odour; but after the fit is over, what is voided is in the ordinary quantity, of a high colour, and sometimes deposits a sediment.

Congestions of blood, or of serous and pituitous humours in the lungs, noxious vapours arising from a decomposition of lead or arsenic, impure and smoky air, cold and foggy atmosphere; scrofulous, rheumatic, gouty, psoric and scorbutic acrimony; a weak digestion, attended with great flatulency; general debility; water in the chest; aneurisms; polypi, or concretions of grumous blood in the large vessels, and the like, are the causes from which this formidable disease may arise in

different individuals. In some instances it proceeds from an hereditary predisposition, and in others from mal-conformation of the chest.

Asthma having once taken place, its fits are apt to return periodically, and more especially when excited by certain causes, such as by a sudden change from cold to warm weather, or from a heavier to a lighter atmosphere; by severe exercise of any kind, which quickens the circulation of the blood; by an increased bulk of the stomach, either from too full a meal or from a collection of air in it; by exposures to cold, obstructing the perspiration, and thereby favouring an accumulation of blood in the lungs; by the violent passions of the mind; by disagreeable odours, and by irritations of smoke, dust, and other subtile particles floating in the air.

A consequence of convulsive motions is the habit of repetition the muscles have contracted by laws peculiar to the animal economy; so asthma is believed to depend frequently upon this cause.

It has also in some instances been supposed to proceed from irritation in the stomach, uterus, and other abdominal viscera; but whether the cause of convulsive asthma may be extraneous to the thoracic cavity, is a point not clearly decided. Many facts appear, however, to support the conclusion.

The proximate or immediate cause of the disease has by Dr. Cullen, and most other writers, been supposed to be a preternatural or spasmodic constriction of the muscular fibres of the bronchiæ, which not only prevents their being so dilated as to admit of a free and full inspiration, but also gives them a rigidity, which interferes with a free and full expiration.

This doctrine has, however, been disputed by Dr. Bree, who, in a very ingenious treatise on this disease, offers it as his opinion, that irritation seated within the air-cavities, and arising either from an effusion of serum, or from aërial acrimony, is the true proximate cause of convulsive asthma. The mucus which is excreted in the course of the discase, and which has been looked upon by Dr. Cullen, and others, as only an effect, Dr. Bree views as a prominent cause of the paroxysm; or, when it is absent, only yielding to a different cause equally irritating to the organ, and exciting spasmodic contractions of the respiratory muscles.

Dr. Darwin says, that whatever may be the remote cause of the paroxysms of asthma, the immediate cause of the convulsive respiration, whether in the common asthma, or in what is termed the convulsive, which are perhaps only different degrees of the same disease, must be owing to violent voluntary exertions to relieve pain, as in other convulsions; and the increase of irritability to internal stimuli, or of sensibility during sleep, must occasion them to commence at this time.

The sudden accession of the paroxysms generally after the first sleep, their returning at intervals, and the sense of constriction about the diaphragm, occasioning the patient to get into an erect posture, and to fly for relief to the cold air, will readily distinguish asthma from other diseases.

If the attacks of asthma are neither frequent nor severe, and the patient is young, there may be a possibility of removing the disease entirely; but where it comes on at an advanced period of life, has frequent paroxysms, and proceeds either from an hereditary predisposition, or from a condition of the body subject to serous defluxions, it will be impossible to eradicate it. By changing into other diseases, as consumption and hydrothorax, or by occasioning an aneurism of the heart, or of some large vessel, it is apt to prove fatal; but without such occurrences it is by no means attended with danger, although it may seem in many instances to threaten almost immediate death by suffocation. Anasarcous swellings of the lower extremities, and some degree of diabetes, are complaints which frequently attend on asthma, where it has been of long duration.

The respiration becoming suddenly quick and short, paralysis of the arms, great depression of strength, a scanty secretion of urine, and frothing at the mouth, indicate much danger.

The inspection of dead bodies has thrown but little light either on the nature or cause of this disease. A series of observations from Morgagni, and the works of many other anatomists, have however proved the existence of extravasated serum in the vesicles of the lungs of asthmatics, in most instances. Where the disease has been of long continuance, various morbid affections of the system have been discovered on dissection.

In the treatment of asthma, it is too much the practice to adopt bleeding during the paroxysms, with the view of preventing any danger from the difficult transmission of blood through the lungs, and of obviating the plethoric state of the system, which might be supposed to have a share in producing a turgescence of the blood in the lungs; but bleeding has proved highly injurious in almost every instance of the disease, by delaying the expectoration, and is certain to be attended with bad consequences, where asthma has arisen in elderly persons, or has been of long standing. In full plethoric habits, possibly cupping between the shoulders might be of some service.

On blood-letting, Dr. Bree makes the following judicious observations: "Many doubts," he says, "occur on the propriety of bleeding in any species of this disease. Before the pulmonary vessels have attempted to relieve themselves by their exhaling orifices, blood may possibly be drawn with advantage; but when effusion has taken place, a certain debility is indicated, and a loss of contractile power in the coats of the vessels, which prudence will rather submit to during the fit, and attempt to remedy in the intermission. In this state of the disease, nature pursues the path best adapted to her circumstances; the escape of serous fluid gradually relieves the vessels, and respiration and absorption must be relied on, with a salutary cough, to clear the air-cells of the lymph. If evacuations of blood are directed, the sudden depletion of the vessels will leave their coats without the stimulus necessary to produce a contraction equal to the space which the blood had occupied; the heart will participate in the injury, and will also be deficient in vigour of contraction. If, therefore, blood is to be taken away, it

should be drawn from the vessels at intervals, and in small portions, which would allow of the contractile power being exerted, in proportion as the vessel loses its contents, and would not finally take so much fluid away as would leave it without the stimulus of distention, so essential to the return of health.

"But bleeding is an imprudent operation in every species of asthma, unless it be the second. In the first species I have repeatedly directed it; but have never had reason to think that the paroxysm was shortened an hour by the loss of blood; and I have often been convinced, that expectoration was delayed, and more dyspnœa remained in the intermission, than was common after other paroxysms. In old people who have been used to the disorder, it is certainly injurious. In the second species there are occasional topical inflammations, which this operation may relieve; but if it is carried far, there is the strongest reason to apprehend that the patient may be plunged into asthma of the first species."

That the reader may have a clear idea of Dr. Bree's meaning, it is necessary to say, that he divides convulsive asthma into four species:

The first species, arising from pulmonic irritation of effused serum.

The second species, arising from pulmonic irritation of aërial acrimony.

The third species, arising from abdominal irritation in the stomach, uterus, or other viscera.

The fourth species, secondary and dependent upon habit, after irritation is removed from the thoracic or abdominal viscera.

Purging is attended with the same injurious effects as bleeding, in all species of this disease; but as asthmatics are hurt by an accumulation or stagnation of matters in the alimentary canal, so costiveness must be obviated by a proper attention to diet; and where this proves insufficient, by the employment of gentle laxatives, such as magnesia, with the addition of a few grains of rhubarb. During a paroxysm, costiveness may be removed by an emollient clyster.

Emetics, by their taking off the determination of blood from the lungs, and supposed power of assisting expectoration, have been found highly useful in all species of asthma, except that which depends on habit. A vomit given in the evening, when a fit has been expected to come on in the night, has in some instances appeared to prevent its attack. It therefore seems an advisable practice to make use of gentle emetics, and to repeat them frequently. Ipecacuanha being more mild and certain in its operation than any of the preparations of antimony, ought therefore to be used.

Even during the paroxysms of asthma the administration of an emetic may not be improper. The remedy can only be resorted to with safety, however, where no symptoms of inflammation are discoverable; where the respiration is not extremely impeded; and where the patient's strength is not much exhausted.

Blistering and issues have been much employed in asthmatic cases, but they seem only to be serviceable in those which have arisen from the stoppage of some long-accustomed or habitual discharge, or in the com-

plicated cases of old people. In pure spasmodic asthma, they have not been found either to prevent or relieve the fit.

Under the supposition that asthma arises frequently from predisposition, or from a preternatural mobility or irritability of the lungs, antispasmodics have been much used to moderate the paroxysms. Of this class, æther and opium have been found most useful, and particularly the latter; but its value is frequently much enhanced by combining it with the former, as below.*

These medicines seem, however, to have no certain efficacy in shortening the paroxysms, except in those cases where the disease arises from a preternatural mobility or irritability of the lungs, or is continued from habit. In these instances, they may prove highly serviceable, but in no others. The fetid gums have also been much employed in asthma; but from their heating quality, they have been observed in some cases to prove hurtful.

Dr. Bree mentions, "that having been afflicted with asthma, he took, during a paroxysm of the first species, four grains of solid opium, which produced nearly an apoplectic stupor for two days. After a few hours, the most debilitating sickness came on, with incessant efforts to puke. The labour of the respiratory muscles was abated, but the wheezing evidently increased; a countenance more turgid than usual, and intense head-ach, attended. The pulse was increased in strength and quickness for a few hours, but then sunk into great weakness."

He further observes, "that the paroxysm shewed itself four hours earlier than usual the next day, and two grains more were taken when it was perceived to commence; respiratory labour seemed again to abate, but the anxiety increased to an alarming degree, as the stupor became less. The pulse was now weaker, and frequently irregular. Loose motions succeeded, and a general sweat. The energy of the paroxysm then revived with exquisite distress. A medical friend, who attended with great care to the progress of these trials, became alarmed, and endeavoured to promote puking, without effect. Blisters were applied, and draughts of vinegar and pepper were given, interposed with strong coffee and mustard. The patient was at last brought back to a state more usual in former paroxysms; but with every care, the exacerbations were no fewer than nine, before expectoration, becoming gradually more copious, concluded the fit. Notwithstanding the bad success of this experiment, opium was used in another paroxysm, after an active vomit, and bad consequences still ensued, though not so extensively."

To prevent the frequency and severity of the paroxysms in asthma, smoking, or chewing of tobacco, has been had recourse to, and sometimes with a good effect, particularly in the spasmodic asthma.

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* ℞. Aq. Pulegii ℥jfs.
Æther. Sulphuric. gutt. xxx.
Tinct. Opii gutt. xv.
—— Lav. C. ℥fs. M.
ft. Hauſtus 4ta vel 6ta quaq. hora ſumendus.

As the free passage of air to and from the lungs is obstructed in the first species of asthma, by a lodgment of mucous matter, the expulsion of this should be promoted by pectorals, such as gum ammoniac, squills, &c. combined as below,* or as prescribed under the head of Peripneumony; but oily demulcents ought to be avoided, as being injurious. A decoction of madder-root has in some cases been used as an attenuant and expectorant with a good effect.

In most cases of asthma, dyspepsia is a prominent symptom, and the patient is much troubled with flatulency of the stomach, acidities, and other symptoms of indigestion. To remove these, it will be necessary to make use of absorbents with stomachics and bitter infusions, as recommended under the head of Dyspepsia. Dr. Bree observes, that chalk and opium will astonish the asthmatic, by the excellence of their effects, when the irritation proceeds from dyspepsia of the first passages only. Vinegar, separately exhibited, was likewise found by him to counteract the flatulence and distention of the stomach.

Diaphoretics are a class of medicines which may prove useful in that species of asthma which is dependent upon pulmonic irritation of aërial acrimony, by promoting exhalation from the vessels of the lungs. Small doses of opium may be conjoined with a good effect, as in the pulv. ipecac. c. and the patient should not be subjected to the influence of irritating causes, such as are known to exist in towns and manufactories. Warm pediluvia may be ordered.

The digitalis is a medicine which has lately been administered in asthma. In the fourth volume of the Medical and Physical Journal, page 329, mention is made of a case by Dr. Sugrue of Cork, in which its salutary effects were speedily and decisively produced. The tincture (as advised to be prepared by Dr. Darwin) was the preparation had recourse to, and this was administered in doses of fifteen drops, repeated twice a day. We are informed, that when his patient applied for advice, he was pale and emaciated; complained much of a sense of suffocation and tightness about the chest; he scarcely slept, but after dozing about an hour, on going to bed, he awoke very much oppressed, was obliged to sit up in the bed during the remainder of the night, and very often believed that he could not live until morning. His pulse was about 120, and very feeble.

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* R. Lact. Ammon. ℥iv.
Oxymel. Scillæ ℥iij.
Vin. Antimon. gutt. l.
Acet. Diſtillat. ℥ſs. M.
ft. Miſtura cujus sumat Cochl. ij. ſubinde.

Vel

R. Gum. Ammon. ℥ij.
Pulv. Scillæ ʒj.
Sapon. Hiſpan. ℈ij.
Bals. Sulph. Aniſat. q. s. M.
fiant Pilulæ LX. quarum sumat æger iv. vel v. pro dos.

Vel

R. Gum. Ammoniac. ʒjſs.
Florum Benzoin. ʒj.
Bals. Peruv. gutt. xv.
—— Sulphurat. q. s. M. et in Pilul. No. xij. e singul. drachma divid.
Capiat iij. mane et veſpere.

Dr. Sugrue states, that he put him under a course of the digitalis, as just mentioned. As he lived in a remote part of the city, he did not see him again for a fortnight; at the end of which time he again called upon him. The remarkable change which had taken place in his appearance was astonishing; he had got rid of the wheezing and oppression at his chest; his countenance was much fuller, and his complexion was much less pale; his pulse was about 90, and tolerably strong. It appears from the account the patient gave of himself, that after he had taken the medicine about three days, he no longer felt himself obliged to sit up at night, but was able to take a comfortable nap, after which he felt himself refreshed, a sensation with which he had been for some months unacquainted. At the expiration of a week he could sleep five or six hours, and his appetite and strength improved in the same proportion; he no longer experienced the necessity of stopping to take breath on ascending an eminence. From continuing the medicine, he was, at the time of making this report, in better health than he had been for ten years before.

We are further informed by Dr. Sugrue, that in every other case of asthma in which the digitalis was exhibited by him, the most violent symptoms were mitigated, and the general state of health visibly improved. One effect which took place in every patient, and which particularly attracted his attention, was, that the expectoration was diminished, and at the same time the necessity of it seemed to be removed, which shewed how different its action was from that of antimonials. Another striking difference between its action and that of antimonials was, that it appeared less efficacious in relieving the symptoms of asthma, in those cases in which it produced nausea or vertigo. The digitalis in conjunction with opium, by suspending the symptoms, has been found highly serviceable in cases of spasmodic asthma.

It does not admit of the smallest doubt but that a combination of digitalis with opium has proved highly advantageous in spasmodic asthma, when given in the dose of half a grain of each every four or five hours. I have tried it, and found it to answer in two or three cases.

In addition to the means which have been recommended to be employed during a fit of asthma, it may be necessary to mention, that recourse has been had to the assistance of pneumatic medicine, and that the gases, or factitious airs, have been much used by a few physicians, but more particularly by Dr. Beddoes and Dr. Thornton. By the former of these gentlemen we are told, that such is the miraculous effect of oxygen, vital or dephlogisticated air, when applied in asthma, that no sooner does it touch the lungs, than the lived colour of the countenance disappears, laborious respiration ceases, and the functions of all the thoracic organs go on easily and pleasantly again.

Of pneumatic remedies, Dr. Bree speaks with little confidence as to their efficacy in curing asthma. He however proposes oxygen as an auxiliary with other means of relief in that species arising from mucous irritation. In the dry asthma, oxygen was observed by him to be manifestly hurtful, and hydrogen and hydrocarbonate were tried without benefit.

Inhaling the vapour arising from æther has been found in some cases of asthma greatly to relieve the paroxysms.

These are the remedies which are to be employed during a paroxysm of asthma; but in the intermission we should have recourse to tonics, such as the Peruvian bark, bitter infusions, chalybeate waters, and preparations of iron, particularly the ferri rubigo, and ferrum vitriolatum, various formulæ of which will be found under the head of Dyspepsia. To assist the effects of these remedies, cold bathing may be used during the intermissions; and where this cannot be obtained, washing the breast frequently with cold water, may probably be of some service. In addition to other tonics, exercise either in sailing, riding in a carriage, or on horseback, but particularly the latter, together with a change of air, will be beneficial to asthmatics: they should try different situations, until by perseverance one is found out to live in, in which the disease is rendered less distressing, or is entirely removed.

Whatever preparation of iron we may employ, it should always be given in small doses at first, increasing the quantity by degrees. If heat, or any other unpleasant symptom is occasioned by it, its use must be suspended for a time, and saline draughts with opium be substituted. A want of firmness in continuing the use of tonics, when properly indicated, is, however, a great source of their discredit. In case of some temporary inconvenience being experienced from employing any particular medicine, or form, the practitioner should change it for another, never abandoning the general intention of strengthening the system, and thereby preventing a return of the disease.

As in many cases of asthma, and perhaps in the great majority of them, some effusion of serum into the lungs takes place, and the disease being long protracted, particularly at an advanced age, is very apt to terminate in hydrothorax, it would appear that the digitalis, combined with the other remedies which have been mentioned, during the intervals of the paroxysms, will be a very judicious mode of treatment. Indeed its diuretic powers on such occasions have, in some cases, produced a happy effect.

A dry and settled atmosphere is most friendly to asthmatical people, not only because it is free from impure vapours, but also as having more elasticity to press upon the vesicles of the lungs. While some asthmatical persons cannot live, however, with any comfort, in the atmosphere of large cities, there are others again who feel themselves better in an air replete with gross effluvia, and breathe with greater ease in a crowded room where there are candles and a fire.

In every species of asthma, the patient's diet should consist of such things as are light, and easy of digestion, carefully avoiding, at the same time, whatever may tend to generate flatulency; and as many kinds of vegetables are apt to be attended with this effect, they are almost all improper. Animal food of the lightest kind, taken in a moderate quantity, so as not to overload the stomach, will be the most proper for asthmatics; and for ordinary drink, they may use toast and water, or

other cold watery liquors. All vinous, spirituous, and fermented liquors will be injurious to them Tea will likewise be improper, from its being usually drank warm, and from its supposed power of weakening the nerves of the stomach. Coffee has been employed in asthma with much advantage when taken in a powerful dose. In the pure spasmodic kind, if made so strong as an ounce to the cup, without milk or sugar, and repeated, if necessary, at the distance of a quarter or half an hour, the fit has been entirely removed; and this practice has been continued by patients labouring under the disease for years, affording certain relief to their paroxysms. Some practitioners have, however, disapproved of the use of coffee.

Garlic is a vegetable production which is found of service to asthmatical people. Acids usually agree with them.

Of CANINE MADNESS, or HYDROPHOBIA.

HYDROPHOBIA is attended with fever, and a general disorder of all the functions; but is particularly marked by a horror, or morbid aversion at all liquids, which, when presented, excite convulsive spasms in the throat.

It arises from the introduction of a small portion of the poison by the bite of a rabid animal, and that commonly of the canine or cat kind, as being those which are most domesticated. Some of the old writers have asserted, that the disease has occurred from the contact of this saliva, without the intervention of the poison of a rabid animal with the skin, independently of any bite, or the infliction of any apparent injury; but the possibility of this I much doubt. At any rate, the occurrence is to be considered as very rare indeed.

There can be no doubt, however, but that symptoms exactly resembling those of genuine rabies canina have arisen in the human body from other causes. Local irritation from wounds in irritable habits, especially when conjoined with a perturbed state of the passions, and also violent affections of the mind, independently of corporeal injury in hysterical and hypochondriacal constitutions, have at times produced all the pathognomic symptoms of canine madness. Violent alternations of heat and cold, and all other causes which induce great debility, and at the same time increase the irritability of the system, have also at times proved adequate to the production of symptoms, exactly corresponding with those of rabies canina. Such cases have been denominated by medical writers, spontaneous hydrophobia.

A few have gone so far as to doubt the existence of this affection, as arising from the bite of a rabid animal; but this has been proved in the clearest manner, in various instances.

Many have doubted whether madness can arise in animals without preceding contagion.

Some cases recorded by M. Rossi, in the Mem. de l'Académie de Turin, tom. 6th, evidently demonstrate, however, that animals, previously healthy, become capable, when enraged or irritated to a high degree, of

communicating disease by their bite; a circumstance which, although long credited by the vulgar, wanted the support of direct evidence to establish it satisfactorily.

Food of a highly putrid nature, a deficiency of water to assuage thirst, severe exercise during very sultry and dry weather, and a certain state or peculiarity in the atmosphere, similar to what produces epidemics of other kinds in the brute species, may possibly be capable of giving rise to madness in the canine and cat species, as well as a long-continued worrying of the animal. Some physicians, however, are disposed to dispute the efficiency of these remote causes, and maintain the actual infection from a diseased animal, by an inoculation of the poison, to be the sole exciting cause. There are, however, strong presumptive proofs that rabies does originate spontaneously in some quadrupeds; and carnivorous animals seem most, if not alone, liable to it as a spontaneous disease.

It does not appear, however, that madness is so prevalent among dogs in warm climates as in cold ones; for during a residence of many years in the West Indies, I never heard of or met with a single occurrence of the kind.

We are also informed by various writers that canine madness is a stranger to South America, and according to the testimony of Volney* it is equally unknown in Egypt and Syria. Mr. Barrow† also tells us, that notwithstanding the heat of the climate at the Cape of Good Hope, and though the dogs are fed in the interior by the Kaffers on meat in a highly putrid state, still this disease is unknown there.

The disease seems to arise from a specific contagion, which, being once produced, by causes unknown, continues to be propagated by the intercourse which dogs have with one another. It is alleged that the distemper is not communicable from one hydrophobous person to another, by means of a bite, or any other way; but this seems to require further confirmation.

We know of no instance of the disease being returned from the human species to the quadruped, for it has been attempted by inoculation, and failed: neither have we any proof that any of the secretions of a rabid animal but the saliva can excite hydrophobia.

A large portion of such persons as have really been wounded by the bite of a rabid animal are never affected with the disease. Mr. Hunter mentions an instance of twenty persons being bitten by the same dog, and only one was seized with it. It is therefore obvious that different persons are not alike predisposed to be acted upon by the same contagion, and likewise that the predisposition to receive contagion varies in the same person at different periods. The depressing passions, as well as other causes producing debility, probably may predispose the system to the action of this virus.

In the canine and cat species about seven or eight days may be considered as a fair average of the shortest period in which hydrophobia

* See his Travels, vol. i.

† ——— into the Interior of Africa, from the Cape of Good Hope.

shews itself after the animal is bitten, and six or seven weeks the longest period from the date of the bite. In the human species, only a few days have in some instances elapsed previous to the symptoms shewing themselves; but the most common time of their appearance is from twenty to forty days after the bite. There are no well-authenticated instances of the poison lying dormant longer than eleven or twelve months; and we may therefore consider a person pretty safe at the expiration of a year without any symptom appearing.

In the cases quoted by authors where canine madness is said to have occurred at the distance of many years from the communication of the supposed poison, we may justly consider them either as instances of spontaneous hydrophobia as before mentioned, or of such other diseases as occasionally exhibit the anomalous symptoms of an inability to swallow fluids, and an aversion to the sight of them: the poison of a rabid animal has had no share in their production. The frequent occurrence of an aversion to fluids, and of great difficulty in swallowing them in women affected with hysteria, have been noticed by many writers, and some of these facts demonstrate that all the symptoms of canine madness have been brought on by violent affections of the mind in irritable and delicate habits. The fatal termination of some of these instances, tends further to confirm the strictness of analogy between canine madness and hysteria. Possibly some cases also of tetanus, in which there has been much local irritation in an excitable habit, conjoined with a perturbed state of the passions, may have been mistaken for hydrophobia, by exhibiting symptoms exactly corresponding with those of rabies canina.

Hydrophobia, in a dog, is usually preceded by a dull heavy look, hanging of the ears and tail, stupor, surliness, and snapping at bystanders; soon after which, his breathing becomes quick and laborious, his tongue hangs out of his mouth, and changes to a leaden colour; he discharges a frothy saliva, refuses all food and drink, runs about, bites at every thing that comes near him, and at last becomes quite furious. This is the last stage, in which he seldom lives above thirty hours. The nearer to this state the more dangerous will be the bite, and the more direful its effects.

In the human species, the general symptoms attendant upon the bite of a mad dog, or other rabid animal, are;

The part bitten, after some time, begins to be painful; then come on wandering pains, with an uneasiness and heaviness, disturbed sleep and frightful dreams, accompanied with great restlessness, sudden startings and spasms, sighing, anxiety, and a love for solitude. These symptoms continuing to increase daily, the cicatrix of the wound becomes hard and elevated, a peculiar tingling sensation is felt in the part, and pains begin to shoot from the place which was wounded, all along up to the throat, with a straitness and sensation of choking, and a horror and dread at the sight of water and other liquids, together with tremors and a loss of appetite. The person is, however, capable of swallowing any solid substance with tolerable ease; but the moment that any thing in a fluid form is brought in contact with his lips, it occasions him to start back

with much dread and horror, although he labours, perhaps, under great thirst at the time.

This appears to be a circumstance peculiar to the human race; for rabid animals do not evince any dread of water.

Some practitioners are of opinion that this peculiar symptom or starting back with horror at the sight of water and other fluids, does not proceed from any dread of them, but from the fear of swallowing them, owing to the diseased state of the parts in consequence of inflammation. To swallow liquids, a greater contraction of the muscles of deglutition is requisite than to get down solids, and of course it produces a higher degree of pain and spasm, which explains the greater capability in the patient of being able to swallow solid substances than fluids.

Dr. Vaughan, who has favoured the public with his opinions on hydrophobia, denies, however, that the excruciating pain, which never fails to attend every attempt to drink, is felt in the fauces and throat. He says, that it is the scrobiculus cordis which is principally affected, this being the part to which the patient always applies his hand. From this circumstance, therefore, from the presence of risus sardonicus, from the muscles of the abdomen being forcibly contracted, and from the sense of suffocation which seems to threaten almost immediate death, he is led to think, that in hydrophobia a new sympathy is established between the fauces, the diaphragm, and the abdominal muscles.

Dr. Rush, from some appearances which he observed on dissecting a boy who died of hydrophobia, from the bite of a mad dog, has been induced to suppose that it is the temporary closure of the glottis which produces the dread of swallowing liquids; hence the reason why they are taken in suddenly and at intervals. The same danger and difficulty attend the swallowing saliva; and hence, he thinks, the symptom of spitting, which has been so often noticed in hydrophobia. In the case here alluded to, the morbid appearances were as follow: the epiglottis was inflamed, and the glottis so thickened and contracted, as barely to admit of a probe of the common size. The trachea below it was likewise inflamed and thickened, and contained a quantity of mucus in it. The œsophagus exhibited no marks of the disease, but the stomach had several inflamed spots upon it.

A vomiting of bilious matter soon comes on in the course of the disease, and an intense hot fever ensues, attended with continual watching, great thirst, dryness and roughness of the tongue, hoarseness of the voice, and the discharge of a viscid saliva from the mouth, which the patient is constantly spitting out; together with spasms of the genital and urinary organs; in consequence of which the evacuations are forcibly ejected. His respiration is laborious and uneasy, but his judgment is unaffected, and as long as he retains the power of speech, his answers are distinct. In some few instances, a severe delirium arises, and closes the tragic scene; but it more frequently happens, that the pulse becomes tremulous and irregular, that convulsions arise, and that nature, being at length exhausted, sinks under the pressure of misery.

Our prognostic in this disease must always be unfavourable, as in most instances a cure has been attempted in vain. Death commonly takes place about the third or fourth day from the first appearance of the symptoms.

The appearances to be observed on dissection in hydrophobia are unusual aridity of the viscera and other parts; marks of inflammation in the lower portion of the œsophagus and cardia, and the stomach and intestines are frequently much distended with flatus. Some marks of inflammation are likewise to be observed in the brain, consisting in a serous effusion on its surface, or in a redness of the pia mater; which appearances have also presented themselves in the dog. Now and then we meet with an accumulation or effusion of blood in the lungs.

In some cases of dissection, not the least morbid appearance has been observed either in the fauces, diaphragm, stomach, or intestines. The poison has therefore been conceived by some physicians to act upon the nervous system, and to be so wholly confined to it, as to make it a matter of doubt whether the qualities of the blood are altered by it or not, or whether the poison at all enters the system by the absorbents. As far as my knowledge extends, the lymphatic glands in the course of absorption have never been found diseased.

In the treatment of canine madness, our attention should be directed to the stopping short the disease, by preventing, if possible, the absorption of the poison into the system. To effect this, we ought to extirpate the wounded part, then apply a cupping-glass with scarifications to it, so as to make it bleed freely, and afterwards dress it with some irritating ointment, such as the unguentum cantharidis, that the wound may be kept discharging for a considerable length of time.

Many persons who have been treated in this manner, have been known to escape the disease; while others, who have neglected these means, and who were bitten by the same animal, have become affected. The sooner, however, that the wounded part is extirpated after the accident, the better; but it will be right to do it, even at the distance of several days, rather than that the person should be debarred of the chance which extirpation affords, as there is great reason to presume that the canine poison does not enter the system so quickly as a variety of others are perceived to do. This conclusion we are somewhat authorised to draw, as in several well-attested cases many weeks, nay months, have intervened between the accident of being bitten, and the appearance of the disease.

Dr. Darwin observes,* that if the patient is bitten in a part which could be totally cut away, as a finger, even after the hydrophobia appears, it is probable it might cure it, as he suspects the cause still remains in the wounded tendon, and not in a diffused infection tainting the blood. Hence there are generally uneasy sensations, as cold or numbness in the old cicatrix, before the hydrophobia commences.

Where, either from the timidity of the patient, or the wounded part

* See Zoonomia, vol. iv. p. 50.

being so situated as to render the extirpation of it inadmissible, other means must be adopted. It has been thought that the infectious matter or poison may be removed from the wound made by the teeth of a rabid animal, by washing it well with persevering attention, quickly after the accident, with vinegar or salt and water, or caustic alkali, so diluted that it can be applied with safety. Under the above circumstances, it will therefore be right to have recourse to this remedy; but previous to its use, it would be proper to dilate or enlarge the wound sufficiently so as to allow it to bleed freely. Having done so, and washed it for a considerable time, either the actual cautery or caustic may be applied to it. Ligatures above and below the wounded part have been recommended by Dr. Percival during the ablutions, when they can be put on.

Under the head of Animal Poisons it will be mentioned that the external application, as well as the internal exhibition of the aqua ammoniæ puræ was found on many trials entirely do away the injurious consequences arising from the bite of the cobra de capello, a snake of the most venomous kind, and productive of symptoms pretty similar to those arising from a rabid animal. The same remedy would therefore seem worthy of a trial in cases of hydrophobia; but as there would be great difficulty in administering caustic volatile alkali in a state necessarily diluted with some mild bland liquor, where the increased sensibility of the fauces and the dread of liquids are so strongly felt, we might convey it into the stomach in the manner practised by Mr. John Hunter and hereinafter mentioned, or we might mix the volatile alkali with crumbs of bread, and form the mass into pills, or a bolus.

From some experiments made by Dr. Linke of Jena with the saliva taken from a mad dog after it was dead, and that had bitten other animals with a fatal effect, the external application of a strong solution of white arsenic in water to wounds besmeared with the poison, appears to have been attended with the happy effect of destroying the virus, and of preventing the disease from taking place. The remedy seems therefore worthy of further trials in wounds made by rabid animals.

In addition to these modes of prevention, it has strongly been recommended to commence, very speedily, a course of mercurial unction, which is to be continued regularly, and to be applied in a considerable quantity at once, so as to occasion some degree of salivation, to expedite which, warm bathing may be used occasionally. Mercurial fumigations may also assist.

With the design of exciting a rapid salivation in hydrophobia, Dr. Darwin has suggested that one grain and a half of muriated quicksilver dissolved in half an ounce of rectified spirits, may be given frequently to the patient with a prospect of advantage. From a paper by Mr. Addington of West Bromwich, inserted in the Contributions of Medical Knowledge, published by Dr. Beddoes, it appears that a similar mode is adopted by him for the cure of gonorrhœa virulenta, and that he has cured hundreds in a very short time in this manner without the least disagreeable consequence. He directs us to proceed as follows: Three grains of muriated quicksilver are to be dissolved in one ounce of recti-

fied spirit of wine. Half of this mixture is to be taken undiluted at going to bed; it produces a copious salivation for an hour and a half, or longer, during which the patient spits about a quart. Some Glauber's salts are to be taken on the second day after this operation, and on the evening of that day he is to repeat the draught, and the salts on the day but one following.

Dr. Thomas Reid, in a pamphlet which bears the title of Observations on the application of warm and cold Sea-bathing, recites a case which strongly attests the preventive effect of mercury. He makes mention that a man, a woman, and several dogs, were bitten by a supposed mad dog, which was soon after destroyed. A fortnight after the accident, he saw them; the woman was slightly wounded in the little finger, a black scab remained on the puncture: she had great pain in the arm shooting up to her head, particularly in the night, with disturbed and frightful dreams, and great depression of spirits. The man had been bitten in the hand also, but had not so much pain. He directed mercury for them in the manner published by Dr. James. In a few days the symptoms abated; and as the woman's mouth was sore, she desisted from using it. The pain, however, returned very soon, greatly augmented, and affected her head; she resumed the medicine, and every symptom vanished; they both remained perfectly well. Had any return of the disease taken place, he is certain he would have been informed of it.

Dr. Reid further informs us, that the same medicine was given to the dogs; but by some accident one of them was forgotten, and took none; he became raving mad the thirtieth day, and in that state he had him shot; all the other dogs remained well, except a small lap-dog, which died of the salivation. Neither the man nor woman supposed the dog to have been mad, until they began to take the medicine; the mind therefore had no influence in producing the symptoms that ensued.

These facts seem well authenticated, and strongly attest the good effects of mercury, when used at an early period. During the actual presence of the disease, its inutility has been proved in numberless instances.

Dr. Richard Pearson of Birmingham, in his Treatise on Hydrophobia, offers it as his opinion, that if the disease has ever been cured by mercury, it has been in consequence of a counter-impression communicated to the whole system, and not in consequence of the salivation; for a salivation is a constant symptom of the disease, so that if it were curable by a flow of spittle, it would cure itself. This seems, however, a vague mode of reasoning.

Although medicine has hitherto proved ineffectual in all cases where the disease had fully established itself, still it is necessary to mention the plan which has usually been pursued on such occasions.

From certain symptoms which attend on hydrophobia, such as heat, thirst, restlessness, fever, difficulty of breathing, priapism, watchfulness, and furor; from the inflammatory appearances usually observed on dis-

section, and from the successful employment of venesection, in some supposed cases of rabies, this remedy has been much used by many practitioners. I cannot say, however, that I have ever seen any good effect derived from it; nor do I understand that, in any case, where the true characteristics of the distemper were present, it has afforded relief. Unless the patient, therefore, is of a plethoric habit and an athletic make, it may be as well not to have recourse to the lancet.

The inflammatory diathesis, which has been supposed to exist in this disease, has of late been disputed, and particularly by Dr. Pearson. He observes, that some of the symptoms are merely accidental, others scarcely perceptible, and some, even if present, would not denote the disease to be of a nature requiring venesection.

Under the idea that canine madness is an inflammatory disease, warm bathing, and the rest of the antiphlogistic plan, have been much used in its treatment; but these means proving ineffectual, and from a fancied analogy between tetanus and rabies, some practitioners have been induced to recommend cold bathing, with a free use of wine.

Dr. Russell makes mention that wine in large quantities has been administered with success against the bites of venomous serpents; between which disorder and rabies we can readily allow some degree of affinity. With respect to cold bathing, this has been found to aggravate the disease, when it has once absolutely taken place, by exciting convulsions; but before it has shewn unequivocal symptoms, and is apparent, this remedy may probably be used with advantage. That cold bathing possesses a degree of preventive power against the effects of canine poison, is an opinion handed down by ancient writers, and is still entertained by many of the moderns.

From considering that the poison of a rabid animal produces an excessive increase, or morbid alteration of the natural sensibility, and that those who are bitten by a mad dog, or other animal so diseased, are in a perpetual state of restlessness, from the beginning of the attack to the end; that they can ill bear the impression of objects upon the senses; that the least noise is offensive, and that all feeling is painful, opium has been much employed; and considering that the poison produces these effects, we might be induced to suppose that it would have proved a valuable and powerful remedy. Many cases are however on record, where, although it was given to the quantity of 180 grains in the space of fourteen or fifteen hours, it failed to produce any good effect.

Whenever opium is administered, the dose ought to be pretty considerable, and its repetition should be regulated by the effect it occasions, without much attention to the quantity. Might not the external application of it, as advised under the head Tetanus, be worthy of a trial? Where the patient loses the power of deglutition, introducing opium into the system, by means of friction, appears to be a very eligible plan. Mr. Ward of Manchester was, I believe, the first who suggested its being employed in hydrophobia in this manner. Indeed, as the throat appears in this disease always to be affected with spasmodic contractions, it would seem advisable to rub it frequently

with a strong anodyne liniment,* applying afterwards a plaster of opium, camphor, asafœtida, and gum galbanum to it.

Dr. Stutz of Suabia, very much recommends a trial of the vegetable alkali in this disease, alternately administered with opium, together with its external application in a warm bath.

Besides opium, other antispasmodics, such as musk, have been employed in the treatment of hydrophobia, but without much advantage. The best plan will be to unite their powers, by giving them combined as below.†

As ipecacuanha, in small doses, proves serviceable in some spasmodic diseases, it perhaps might be useful to give it in this. It should not, however, be administered so as to provoke vomiting, but only in such doses as will be sufficient to promote a copious perspiration, by exciting a slight degree of nausea. It is probable, that the pulvis ipecacuanhæ compositus (in which there is a portion of opium) ought to be preferred to the simple powder, as being usually attended with a more certain diaphoretic effect.

It is asserted that some cures have been performed by a liberal use of vinegar. We have likewise been assured, that anointing the body freely with sweet oil, and pouring repeated draughts of it forcibly down the throat, has lately been discovered to be a successful remedy in hydrophobia. The dread of fluids is said to diminish in proportion to the quantity of oil which is swallowed. A method of preventing the plague somewhat similar to this, has been noticed under the head of that disease.

Among the medicines celebrated for their virtues in this disease are to be enumerated the Ormskirk powder, the Tonquin remedy, and the Carnatic pill. The former of these seems perfectly inert, and, on a careful analysis, was found to consist of about half an ounce of prepared chalk, ten grains of alum, three drachms of armenian bole, one drachm of powdered elecampane root, and a few drops of the oil of aniseeds. The principal ingredient in the latter is arsenic. This mineral is much employed by the Hindoo physicians as an antidote to hydrophobia. It enters into the composition of the East India snake-pill, a medicine communicated to the presidency of Madras by a native of Tanjore, and which we are told by Dr. Simmons (one of the Company's surgeons) he has administered with apparent success, to persons bitten by mad dogs. In Dr. Hamilton's Treatise on Hydrophobia it is indeed much recommended to try the effects of arsenic in this disease. As strong epileptic paroxysms have been stopped, by administering the arsenical solution, possibly it might have a good effect in rabies. Calcined zinc, and the cuprum ammoniacum, are other mineral preparations which have been named, as well adapted to the disease. The

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* ℞. Tinct. Opii. ℥j.
Spirit. Camphorat. ℥ss.
Aq. Ammoniæ ℥ij. M.
ft. Linimentum.

† ℞. Mosch. Optim. gr. xij.
Camphor. gr. v.
Opii gr. iij. ad ℈j.
Bals. Peruv. q. s. M.
ft. Bolus tertia hora sumendus.

Tonquin medicine consists of twenty-four grains of native cinnabar with the same quantity of factitious, made into a powder, with sixteen grains of musk. It is directed to be taken in a teacupful of arrack or brandy, and is said to secure the patient for thirty days, at the expiration of which it is to be repeated; but if he has any symptoms of the disease, it must be repeated in three hours. The first dose is to be taken as soon after the bite as possible.

Notwithstanding the various nostrums that have in all ages and different countries been extolled as antidotes to the poison of rabid animals, we may rest assured that the only remedy on which we can place a confidence is excision or cauterization. Even in wounds completely healed, perhaps it would be advisable to adopt one or other of these, and thereby expose the part within reach of the animal's tooth. If the remedy is resorted to before lancinating pains and uneasiness begin to shew themselves about the cicatrix, we may be more likely to succeed by our preventive means, as such symptoms indicate the passage of the virus through the absorbents.

Dr. Pearson is of opinion, that the exciting some degree of fever and inflammation, may have a salutary effect in canine madness. He observes, that there is no instance of a person having recovered from an animal poison introduced into the system without more or less inflammatory action. The poison which produces the plague, is often most fatal when it is accompanied with the least degree of fever; and swelling and inflammation of the bitten part, together with increased heat over the whole body, are the usual forerunners of recovery, in cases of viper-bites.

On these grounds he is induced to presume that wine, ardent spirits, and aromatics, may have a beneficial effect in rabies, provided the aversion to liquids is not so strong as to render the exhibition of wine impracticable. He says, that perhaps the nitric or other mineral acids, or vinegar (as mentioned by Dr. Ferriar,) might be advantageously mixed with the wine. Besides giving wine and vinegar by the mouth, he tells us they should likewise be injected up the rectum. These things are to be administered on the first appearance of the symptoms characteristic of rabies; for as the disease advances, neither wine nor any other liquid can be swallowed in quantities sufficient to produce a powerful effect; and there is sometimes an equal impediment to the administration of clysters.

Even in this state of things, he mentions, we are not without resource. Some of the concrete acids, such as the essential salt of tartar, the essential salt of lemons, or even the flores benzoes, may be given joined with about half as much powdered capsicum, or other strong aromatic, and divided into small portions, to be enveloped in wafer-paper, and formed into boluses. Not less than 20 or 30 grains of the concrete acids, nor less than 8 or 10 grains of the capsicum, should be given for a dose. Dr. Pearson further observes, that while these things are administered internally, topical applications are not to be neglected. Where the bite is in a part that will admit of it, a ligature, as proposed by Dr. Percival, should be applied above the cicatrized wound. This will prevent farther absorption. At the same time the bitten part may

be opened or destroyed by the application of lunar caustic, or concentrated mineral acids. After the corrosion of the cicatrized wound, by the means just mentioned, the ligature which had been passed round the limb, should be removed.

Such is the plan proposed by Dr. Pearson, which being novel, it seemed right to notice. Whether stimulants are really useful and powerful remedies in the treatment of hydrophobia, or not, can only be determined on trial, and not on any previous view of the nature of the disease, which theory may suggest.

It now remains only to observe, that during the furious stage of the disease, the greatest care must be taken that the patient is so confined by means of a strait waistcoat, as to be rendered incapable of doing any injury either to his attendants or himself. As long as he can swallow, his strength is to be supported by things that are light and nutritive, and when deprived of this power, clysters of animal broths must be injected. To assuage his thirst, wine and water may be poured down his throat from the spout of a teapot; but if his dread at liquids is insurmountable, a sponge dipt in hot vinegar may be kept constantly to his mouth and nostrils.

If great costiveness prevails at any time in the course of the disease, it should be removed by a laxative clyster. If this fails in procuring the desired effect, the purgative pills advised below* may be given.

Dr. Rush has suggested that it might be proper, in cases of hydrophobia, to make an artificial opening into the windpipe, obviating by this means the most fatal symptom, and giving time for the employment of other remedies, according to the state of the system; or fluids might be conveyed into the stomach in the manner practised by the late Mr. John Hunter, in a patient who was afflicted with a paralysis of the œsophagus, and consequently unable to swallow any nutriment.† The instrument made use of, was a fresh eel-skin, of rather a small size, drawn over a probang, and tied up at the end where it covered the sponge, and tied again close to the sponge where fastened to the whalebone, a small longitudinal slit being made into it just above this upper ligature. To the other end of the eel-skin was fixed a bladder, and a wooden pipe, similar to what is used in giving a clyster, only the pipe being large enough to let the end of the probang pass into the bladder, without filling up the passage. The probang thus covered, was introduced into the stomach, and both food and medicines being put into the bladder, were squeezed down through the eel-skin.

As cases, however, of this kind may occur, where eel-skins cannot be procured, a portion of the gut of any small animal will make a good sub-

† See Transactions of a Society for the Improvement of Medical Knowledge, vol. i.

* ℞. Extract. Colocynth. C. gr. xx.
Calomel. gr. v.
Ol. Carui gutt. iij. M.
ft. Massa in Pilulas vj. dividenda.

stitute. By this mode, whatever fluids are administered, would not come in contact with the irritable parts of the gullet.

Of the COLIC, or COLICA.

COLIC is a painful distention of the whole of the lower region of the belly, with a twisting round the navel in particular, often accompanied with vomiting, costiveness, and a spasmodic contraction of the muscles of the abdomen.

The disease is produced by various causes, such as crude and acescent food, a redundance of acrid bile, long-continued costiveness, hardened fæces, derangement of the primæ viæ, metastasis of gout or rheumatism, the application of cold and moisture, worms in the intestinal tube, and the having swallowed poisonous substances. It has commonly been considered as being of different species, and has been variously denominated according to the cause which has given rise to it, as the bilious, the flatulent, and the hysteric; but in all of them, the proximate cause seems to be the same, viz. a spasmodic constriction of some part of the intestines.

In the bilious colic there is loss of appetite, bitter taste in the mouth, thirst, febrile heat, costiveness, and a vomiting of bilious matter, attended with an acute pain all round the region of the navel; and as the disease advances, the former becomes more frequent, and the latter more severe and lasting.

In the flatulent colic there is great costiveness, attended with pain, soreness and griping of the bowels, a rumbling noise, distention of the stomach, an inclination to throw up, and coldness of the extremities.

In the hysteric colic there is nausea and sickness at the stomach, accompanied with severe spasms, costiveness, and dejection of spirits.

The disease, when arising to a violent height, and attended with a stercoraceous vomiting, obstinate costiveness, and an evacuation of fæces by the mouth, constitutes what is called the iliac passion. In this, as well as in intus-susceptio, the peristaltic motion is inverted, and a high degree of inflammation is the consequence.

The colic is to be distinguished from enteritis by the spasmodic contraction of the abdominal muscles; by the absence or trifling degree of fever, by the state of the pulse, and by the diminution of the pain upon pressure.

When the pain remits, or shifts its situation, not being obstinately confined to one place, and when the patient experiences considerable ease after a discharge either of wind or fæces, and stools are obtained by the employment of proper remedies, we may have reason to expect a favourable termination to the disease; but the sudden cessation of pain, with the costiveness remaining obstinate, cold sweats breaking out, and the ensuing of hiccups, denote a fatal event.

When the disease proves mortal, the usual appearances to be observed on dissection are, a slight inflammation on the surface of the intestines, distention and irregular contraction of some particular part of the tube, or a passing of one portion of it within another, to a considerable extent, the part received within the other being in a contracted state.

In all cases of colic, where the patient is young and vigorous, and the symptoms proceed with such violence as to endanger the ensuing of an inflammation of the intestines, it will be advisable to take away some blood, being regulated, as to the quantity, by the state of the pulse, and the appearance of what is drawn off. In repeating the operation, we are to be guided by the severity of the attack, the continuance of the constriction on the intestines, the habit of the patient, and the state of the pulse.

In the bilious colic, if there is great irritation at the stomach, with frequent vomiting, we may direct a saline draught to be taken every two or three hours in the act of effervescence, with an addition of about five-and-twenty drops of tinctura opii; but if only a nausea prevails, the patient may be made to drink plentifully of chamomile-tea.

When the nausea and vomiting have ceased, he should take some active purgative* to carry off the offending matter, the operation of which may be assisted by a free use of diluent liquors, such as thin gruel and animal broths. As an external fomentation, flannel cloths wrung out in a warm decoction of emollient herbs, or a bladder filled with warm water, may be applied constantly to the region of the navel, or that part which is most painful.

Should the purge be rejected by the mouth, or not operate quickly, we must then attempt to dislodge the contents of the intestines by clysters, making use of mild laxative ones at first, and afterwards resorting to those which are more powerful, if necessary; and these are to be repeated, until a sufficient effect is produced.

In the flatulent colic, we may begin the cure by giving a wine-glass of some aromatic cordial combined with an opiate.† If relief is not soon obtained, an emollient carminative clyster‡ may be injected every three or four hours, and warm fomentations, with an addition of alkohol, be applied over the whole region of the belly. Should clysters not procure a copious evacuation of fæces and wind, some stomachic purga-

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* ℞. Pulv. Jalap. ʒfs.
Calomel. gr. v.
Syr. Spin. Cervin. q. s. M.
fiant Pilulæ v. pro dos.
Vel
℞. Calomel. gr. v.
Extract. Colocynth. C. gr. xv.
Opii gr. j. M.
et in Pilul. v. divid.

† ℞. Aq. Menth. Pip. ʒj.
Spirit. Carui ʒfs.
Tinct. Lav. C. ʒij.
——— Opii gutt. xxx. M.
ft. Hauſtus.

‡ ℞. Sem. Anis. Contus.
Flor. Chamæmel. ää ʒfs.
Coque ex Aq. Fontan. ℔jfs. ad ʒx. et
Colaturæ adde
Natr. Vitriolat. ʒvj.
Ol. Olivæ ʒj. M.
ft. Enema.
Vel
℞. Terebinth. Venet. ʒij.
Vitel. Ovi. No. ij.
Terantur in mortario marmoreo donec penitus folvetur Terebinthina: dein adde gradatim Decoct. Avenæ ℔j. M.
ft. Enema.

tive* may be administered by the mouth. The volatile alkali joined with carminatives will be very proper in the flatulent colic.

If the disease continues to increase with violence notwithstanding these means, so as to threaten the approach of an inflammation in the bowels, we must then resort immediately to bleeding, the warm bath, and blistering over the part more particularly affected. On apprehending a similar consequence in the bilious colic, we may adopt the same means. See Enteritis.

In the hysteric colic it will seldom be necessary to make use of evacuation; but should obstinate costiveness prevail, it will be proper to give some gentle laxative.† If a vomiting attends, the stomach may be cleansed by drinking one or two cups full of chamomile-tea, after which the patient may be ordered some antispasmodic medicine.‡

When a colic of any kind proceeds with great violence, and terminates in an inversion of the peristaltic motion, or iliac passion (as it is usually called,) notwithstanding the means which have been recommended have all been employed, it then becomes advisable to have recourse to the injection of tobacco clysters, which herb may be used either in the form of infusion§ or that of smoke. Where even these fail, it has been customary to attempt a mechanical dilatation of the intestines, by giving a large quantity of quicksilver by the mouth. The practice seems, however, attended with a considerable degree of danger; for should the inversion of the peristaltic motion have arisen in consequence of intus-susceptio, the complaint, instead of being relieved by the remedy, would certainly be increased by it.

A surer and much safer method of employing mechanical dilatation, is by injecting a large quantity of tepid water by a proper syringe, which will throw it into the rectum in a continued stream, and with some force, the patient drinking copiously at the same time. Some persons have borne two gallons to be injected this way, and the cases were attended with the desired success. In those instances where there is an accumulation of hardened fæces in the colon, these large injections seem to be a powerful remedy, as they serve the two intentions of dilating the passage, and of softening the fæces.

Obstinate constipations, arising from an accumulation of fæces in the rectum, and attended with severe colic pains, which resisted the usual means of relief, have been removed by introducing the finger in ano, and then breaking and loosening the scybala. Two cases of this

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* ℞. Tinct. Sennæ C. ℥j.
——— Jalapii ʒfs. M.
ft. Hauſtus.

† ℞. Pulv. Rhabarb. ℈j.
Spirit. Anisi ℥fs.
Aq. Cinnam. ℥j.
Tinct. Jalap. ʒj. M.
ft. Hauſtus ſtatim sumendus.

‡ ℞. Aq. Anethi ℥ivſs.
Tinct. Caſtor. ℥fs.
Æther. Sulphur. ʒj.
Sp. Ammon. Fœtid. ʒfs.
Tinct. Opii gutt. L. M.
ft. Miſtura cujus sumat Cochl. magna ij. tertia vel quarta hora.

§ ℞. Nicotianæ ʒj.
Aq. Font. ℔j. Coque ad ℥xij. Col.
ft. Enema.

nature are recorded in the Edinburgh Medical Commentaries for the year 1795, which undoubtedly suggest an important caution ; to advert to the cause above pointed out, in cases of obstinate costiveness and colic, where the usual means of aperient medicines and clysters have had a reasonable trial, without the desired effect.

Throwing cold water on the extremities, or applying pounded ice, snow, or towels wetted with a solution of ammonia muriata and nitre in cold water to the region of the belly, have been found, in some cases of obstinate constipation, to have been attended with a good effect, where all other remedies have failed.

Those who are subject to attacks of the colic should cautiously abstain from all kinds of crude, flatulent food, and from fermented liquors : they should also avoid, as much as possible, any exposure to wet and moisture, taking due care to obviate costiveness, by a timely use of some gentle laxative.

Of the DRY BELLY-ACH, or COLICA PICTONUM.

THE characteristics of this disease are, obstinate costiveness, with a vomiting of acrid or porraceous bile, pains about the region of the navel, shooting from thence to each side with excessive violence, strong convulsive spasms in the intestines and abdominal muscles, with a tendency to a paralysis of the extremities.

It is occasioned by long-continued costiveness ; by an accumulation of acrid bile ; by cold applied either to the extremities or to the belly itself; by a free use of unripe fruits ; by great irregularity in the mode of living ; by acrid food or drink, such as sour wines or cyder ; and by the inhalation of vapours arising from a decomposition of lead. From its occurring frequently in Devonshire and other cyder counties, it has generally been supposed to arise from an impregnation of lead received into the stomach ; but as the colica pictonum is a very prevalent disease in the West Indies likewise, where no cyder is made, and where there is only a very small quantity of lead in the mills employed to extract the juice from the sugar-canes, this cause cannot be so general a one as has been imagined. It is true, however, that the effect of some metals in destroying or preventing the acidity of cyder or wine, often induces dealers in these articles to employ some of the preparations of lead for this purpose.

A dreadful disease of a similar nature with the colic under investigation, and caused by the destructive fumes of melted lead, is known to be very prevalent among those who are employed in smelting or preparing this metal, and is said to attack even those who live near the furnaces. It passes in many places under the name of the mill-reek.

Colica pictonum comes on gradually with a pain at the pit of the stomach, extending downwards to the intestines, particularly round the navel, accompanied by eructations, slight sickness at the stomach, thirst, anxiety, obstinate costiveness, a frequent but ineffectual desire to evacuate the contents of the bowels, and a quick contracted pulse, but

seldom exceeding one hundred in a minute. After a short time the pains increase considerably in violence, the whole region of the belly is highly painful to the touch, the muscles of the abdomen are contracted into hard irregular knots or lumps, the intestines themselves exhibit symptoms of violent spasm, insomuch that a clyster can hardly be injected from the powerful contraction of the sphincter ani; and there is constant restlessness, with a frequent vomiting of an acrid or porraceous matter, but more particularly after taking either food or medicine.

Upon a further increase of the symptoms, or their not being quickly alleviated, the spasms become more frequent as well as violent, the costiveness proves invincible, and an inflammation of the intestines ensues, which soon destroys the patient by terminating in gangrene. In an advanced stage of the disease it is no uncommon occurrence for dysuria to take place in a very high degree.

The situation of the pain round the navel, the retraction of the belly, the costiveness, the pulse, and the preference given by the patient to a bent position of the body, will readily distinguish this from every other disease of the abdomen.

This colic is always attended with some degree of danger, but which is ever in proportion to the violence of the symptoms and the duration of the disease. Even when it does not prove fatal, it is too apt to terminate in palsy, and to leave behind it contractions of the hands and feet, with an inability in their muscles to perform their office; and in this miserable state of existence, the patient lingers out many wretched years. Such consequences are very frequent in warm climates, and many fell under my immediate care and observation, during my practice in the West Indies.

Dissections of this disease usually shew the same morbid appearances as in common colic, only in a much higher degree.

In all complaints of the intestines, it will be proper to make inquiries respecting the patient's habits of life, and if these be discovered to subject him to the influence of lead, the identity of the disease is proved beyond the possibility of doubt.

The indications of cure in the colica pictonum seem to be,

1st, To guard against the consequences of inflammation, where the attack is severe, and the patient young and plethoric:

2dly, To take off the spasm, by means of various antispasmodic powers; and,

3dly, To excite the action of the intestines, by purgatives and other means.

To answer the first of these intentions, if the symptoms are so violent as to endanger the taking place of an inflammation of the intestines, it will by all means be advisable to draw off a quantity of blood proportionate to the age and habit of the patient, and that at an early period of the complaint. (See Enteritis.) I am sensible that bleeding has been disapproved of by some practitioners in this disease, on the supposition of its being purely spasmodic; but as inflammation, and its fatal termination in gangrene, not unfrequently ensue, when the disease runs on for many days, it seems to be an advisable operation in all

cases where the symptoms run high at first. In debilitated habits, elderly people, and mild attacks, its use may properly be dispensed with.

The step advised being adopted, if judged necessary, we should next resort to antispasmodics for the purpose of answering the second intention, viz. that of removing the spasms. The remedies in general use for this purpose are, fomentations applied to the abdomen by means of flannel cloths wrung out in a warm decoction of poppy-heads with an addition of alkohol; frequent immersion in a warm bath; or taking the patient out of bed, making him walk on a cold damp floor bare-footed, throwing at the same time cold water on his feet, legs, and thighs; and the internal use of opium in considerable doses.

An obstinate case of colica pictonum very lately came under my care, which resisted fomentations, the warm bath, anodyne and tobacco clysters, the internal use of opium and cathartics, and which at last was readily and quickly removed by placing the patient (who was a woman) in a large tub, and throwing a pail of cold water over the abdomen and thighs. The operation was not required a second time, for copious evacuations soon took place, when the spasmodic affection was prevented from returning by small doses of opium repeated from time to time.

The benefit obtained by dashing cold water upon the extremities in this disease and ilius, seems to be owing to the sympathy which exists between them and the intestines: the fibres to the latter become relaxed, while the sudden contraction of the vessels on the skin in consequence of the application of cold determines the flow of blood inwardly, and occasions a copious secretion from the intestinal surface, whereby a free expulsion of their contents quickly ensues.

Where these means fail to produce the desired effect, it is customary to have recourse to anodyne * or tobacco clysters, either in the form of infusion† or smoke. Tobacco administered in the form of infusion is equally efficacious and less indeterminate as to the dose, than when employed by way of smoke. The remedy acts by exciting nausea and syncope, during which the spasmodic affection is relieved, and the constriction on the intestine, if any exists, often removed. It sometimes, however, depresses the living power in the system to so alarming a degree, as to intimidate the by-standers, and to make the patient very reluctantly submit to any repetition of its use. Great caution is therefore necessary in employing it.

The application of a large blister to the abdomen may prove sometimes useful.

In those cases where, from the great irritability of the stomach, we cannot get opium to sit long enough on it, so as to produce the desired effect, it probably might be attended with advantage to convey it into

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* ℞. Decoct. Hord. ℥x.
Opii gr. iij. M.
ft. Enema.

† ℞. Herb. Nicotian. Sic. ℥j.
Aq. Fervent. ℔j. M.
et Cola.

the system, by means of friction, as in the forms advised below,* repeating it at short intervals of about two hours, till some sensible effect is observed.

This mode of introducing opium into the system has been adopted by many practitioners in various diseases, particularly by Mr. Ward, surgeon to the Manchester Infirmary. He informs us,† that from frequent trials he thinks himself warranted in drawing the following inferences: 1st, That opium, when diligently applied externally, so as to be absorbed by the lymphatics, has powerful effects in allaying irritation, removing spasm, and producing sleep. 2dly, That it is capable of producing these happy effects, where the exhibition of it internally had not the same salutary operation. 3dly, That this mode of introducing it into the system, may be resorted to with advantage, when it cannot be given internally, or when it will not sit on the stomach.

As soon as the spasms suffer some little relaxation, and the stomach is somewhat composed, we should advise a mild cathartic‡ to be taken, such as the oleum ricini, tinctura sennæ composita, or a solution of some purgative salt, assisting the operation of the medicine by administering a laxative clyster every three or four hours, should the desired effect not be produced speedily. If stools are not procured by these, we must have recourse to more active purgatives, such as jalapium, extract. colocynth. c. aloes. &c.

In colica pictonum where there is great irritability of the stomach, with frequent vomiting, we should give a preference to calomel over all other purgatives, as it may be administered in the form of pills,§ which will be less likely to be rejected than any medicine in a liquid form. According to the severity of the pains, we are to continue the use of opium either joined with cathartics, or given separately, but perhaps the former might be preferable.

When our endeavours to put a stop to the vomiting and spasms, as likewise to procure stools, are crowned with success, we are then carefully to guard against a return of the disease, by keeping the body regular and open, with the aperient medicines before advised, and by cau-

† See Medical and Phyſical Journal for July 1799, page 447.

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* ℞. Opii Puriſ. Pulv. Subtilis. ʒſs.
Camphor. gr. xv.
Adipis Suillæ ʒij. M.
ft. Unguentum.
Vel
℞. Vitelli Ovi unius.
Tinct. Opii ʒſs. M.
ft. Linimentum.

‡ ℞. Ol. Ricini ℥ſs.
Mucilag. Gum. Arab. q. s.
Aq. Menth. Pip. ℥j.
Tinct. Opii gutt. xxv. M.
ft. Hauſtus sexta quaque hora ſumendus.

§ ℞. Calomelanos gr. v.
Extract. Colocynth. C. gr. vj.
Opii gr. j.
Ol. Carui gutt. iij. Contunde ſimul. et fiant Pilulæ duæ quarta quaque hora ſumendæ.

tioning the patient against exposing himself to cold, or any other occasional cause.

Should a tingling sensation be felt down the spine, together with a feebleness and numbness in the extremities, the parts affected may be rubbed with some kind of stimulating application, as advised under the head of Palsy; besides which, the patient should frequently make use of warm bathing, always giving a preference to natural baths where they can be resorted to. In addition to these remedies, a long-continued use of Peruvian bark, bitters, chalybeates, and friction with a flesh-brush, assisted by electricity, may be employed. Flannel should be worn next to the skin.

That painful and obstinate colic produced by the poison of lead, and the paralysis, or loss of power in particular limbs, which is one of its most serious consequences, is found to be peculiarly relieved by a use of the Bath waters, more especially when applied externally, either generally or upon the part affected.

Dr. Percival found alum, administered in doses of fifteen grains every fourth, fifth, or sixth hour, to afford very great relief in some slight cases of colica pictonum. Metallic tonics, as advised under the head of Epilepsy, seem well adapted to this disorder, and have indeed been used with considerable success.

In an ingenious pamphlet published by Dr. Clutterbuck,* several cases are given of the successful use of mercury in the colic and paralysis of the wrists, produced by lead; and therefore, when the disease is clearly ascertained to have arisen from this mineral, it may be advisable to adopt the plan which he pursued. In some of these patients, a drachm of strong mercurial ointment was rubbed morning and night on the wrists, till the mouth became sore. In others, one grain of calomel was given daily with oleum ricini; and in others, a quarter of a grain of hydrargyrus muriatus was given three times a day with great apparent advantage.

In the treatment of that species of palsy which is produced by the poison of lead, and which is apt to ensue after severe attacks of colica pictonum when excited by this mineral, Dr. Pemberton is of opinion,† that besides the remedies appropriate to the removal of the original disease, some assistance of a mechanical nature might be applied likewise for the purpose of relieving the topical paralysis, by placing the muscles in such a state, as that they might be again enabled to resume their lost action; and for this purpose, he recommends the use of an ingenious mechanical contrivance, which the reader will find fully described under the head of Palsy.

It has been mentioned before, that the effect of some metals in destroying or preventing the acidity of cyder or wine, often induces dealers in these articles to employ some of the preparations of lead for this purpose. The method most in use for discovering the injurious mixture of litharge with wine, is by pouring into it some sulphuric acid, which causes a white precipitate to fall to the bottom of the vessel.

* See his Treatise on the Poison of Lead.

† ——— Diseases of the Abdominal Viscera, p. 155.

This is not, however, so accurate a test of lead as water charged with sulphurated hydrogen, which is thus prepared: Put into a phial a paste of sulphur and iron filings, pour on it a little sulphuric acid, and pass the gas produced into a flask of water by a bent tube.

This water poured on wine mixed with litharge, renders it black and flaky, and produces an abundant precipitate, which soon falls to the bottom of the vessel.

Of a VOMITING and PURGING, or CHOLERA MORBUS.

A FREQUENT and violent discharge of bilious matter, both upwards and downwards, with painful gripings, constitutes cholera morbus.

In warm climates it is met with at all seasons of the year, and its occurrences are very frequent; but in England, and other cold climates, it is apt to be most prevalent in the middle of summer, particularly in the month of August; and the violence of the disease has usually been observed to be greater in proportion to the intenseness of heat. These circumstances naturally induce us to presume, that cholera morbus is the effect of a warm atmosphere producing some change in the state of the bile; which change may consist either in the matter of the bile being rendered more acrid, or its being secreted in a preternatural quantity. In some instances, the disease has been observed to proceed from an obstructed perspiration, as likewise from food which has passed readily into the acetous fermentation, from unripe fruit and acrid ingesta: but these causes, probably, would not give rise to it without the predisposition acquired by preceding great heat.

It usually comes on with soreness, pain, distention, and flatulency in the stomach, and acute griping pains in the bowels, succeeded quickly by a severe and frequent vomiting and purging of bilious matter, heat, thirst, a hurried respiration, and a frequent but weak and fluttering pulse.

When the disease is not violent, these symptoms, after continuing for a day or two, cease gradually, leaving the patient in a debilitated and exhausted state; but where the disease proceeds with much violence, there arises great depression of strength, with cold clammy sweats, considerable anxiety, a hurried and short respiration, cramps in the legs, coldness of the extremities, and hiccups, with a sinking and irregularity of the pulse, which quickly terminate in death; an event that not unfrequently happens within the space of twenty-four hours.

Cholera morbus is to be distinguished from diarrhœa and dysentery by the matter which is discharged being pure bile, unmixed with blood or mucus, and with scarcely any admixture of fæces. It may be distinguished from colica pictonum by the evacuations; for in the latter, although there is sometimes a considerable quantity of bilious matter thrown off by vomiting, yet the bowels remain obstinately costive.

Our opinion must ever be unfavourable when the last-mentioned set of symptoms accompany the evacuations upwards and downwards;

but when the vomiting abates and sleep ensues, we may expect the patient's recovery.

The appearances generally to be observed on dissection, where cholera terminates fatally, are, an accumulation of bile in the stomach and intestines, particularly in the duodenum; relaxation and distention of the biliary ducts and choledochus, and a removal of many of the viscera from their proper places, occasioned probably by the violence of straining in vomiting.

From the very irritable state of the stomach on the first attack of the disease, it is almost impossible for any kind of medicine to be retained on it, and every thing is thrown up again, almost as soon as swallowed. To abate this irritation, and evacuate the redundant or acrid bile, it will be necessary, during this stage of the disorder, to make the patient drink plentifully of diluent liquors, such as barley-water, linseed-tea, rice-gruel, animal broths, or toast and water; and, to assist the effect of their operation, tepid mucilaginous clysters of the same nature may likewise be injected.

In addition to these means, flannel cloths wrung out in a warm decoction of poppy-heads slightly bruised, with an addition of about one fourth of spiritus camphoratus, may be applied to the region of the stomach, taking care to renew them as often as they become cold. Warmth should likewise be applied to the extremities by means of bottles filled with hot water.

As soon as the stomach is sufficiently cleansed by the diluents just recommended, we should endeavour to allay or put a stop to the irritation, by administering opium in sufficiently large doses, but at the same time, in as small a bulk as possible. It may be given in the quantity of a grain or a grain and a half in the form of a pill, and be repeated every two hours as long as the urgency of the case may require; if the pill is rejected, about forty drops of tinctura opii may be added to a saline draught, swallowed in the act of effervescence; and this may be repeated as frequently as the former. In some instances, where the spasms have been so violent as quickly to induce an alarming state of debility, I have known the quantity of opium to have been increased to eight or ten grains in each dose.

In the advanced stage of the disease, where the pulse is weak, and the extremities are cold, opiates joined with aromatics, as in the confectio opiata, and musk in large doses, may be employed with advantage.

Opium when given by the mouth, even in the smallest possible bulk, is frequently rejected by vomiting in cholera morbus; but, if given in an enema, will often in a very short space of time completely remove all the urgent symptoms, and transfer the patient from a state of torture to one of ease. Clysters of this nature ought to be therefore injected from time to time as long as the irritation at the stomach continues.

A cataplasm of opium and camphor applied to the region of the stomach will sometimes revert its retrograde motions. The application of a blister on the stomach will also put a stop very frequently to the vomiting by stimulating the external skin, and by sympathy affecting the membranes of the stomach.

In several cases where there prevailed great pain and irritation at the stomach, and where the patient could retain nothing on it, I have experienced the best effects from the external application of opium to the epigastric region. Indeed no substantial reason can be assigned why it may not be introduced into the system by friction, as mentioned under the head of Colica Pictonum, as well as mercury, camphor, ardent spirits, &c.

It is probable that putting the patient into a warm bath might assist the effects of opiates in all desperate cases of cholera morbus, particularly those accompanied with much spasmodic affection. A writer on the diseases of India* mentions, that a very severe and fatal spasmodic cholera, proceeding from acrid bile in the primæ viæ, is a very prevalent disease on the coast of Malabar, where it is known by the name of mort de chien, from its fatality.

I have been informed by a medical friend who practised many years in the West Indies, where cholera is of frequent occurrence, as has before been observed, that he found large doses of the acidum sulphuricum dilutum to abate the irritation of the stomach more readily than even opium.

When the violence of the attack has somewhat subsided, it will be proper to carry off the remainder of the bile as soon as possible, and thus prevent the continued application of it to the coats of the bowels. The aperient draught prescribed below† may be taken for this purpose.

Although we may have been so fortunate as to procure a remission of the symptoms, still as there is in this disease a great tendency in the spasms to recur after the operation of the opium is over, it will by all means be advisable to continue its use for several days, in such a manner as to keep up a constant effect.

In ordinary cases, where the evacuations are moderate, astringents would be improper, as they might aggravate the complaint by retaining the vitiated bile in the intestines, which ought to be discharged as long as the morbid secretion from the liver continues.

As the debility induced by the disease greatly favours the disposition to spasmodic affections, it may be proper, at the same time that we use opiates, to employ tonics, as wine, bark, and chalybeates (see Dyspepsia,) in order to restore the tone of the stomach, taking care at the same time to obviate costiveness by some gentle laxative, such as rhubarb.

As a vegetable bitter and strengthener of the stomach, columbo-root will be found a useful medicine, and may therefore be given.‡

* See Mr. Curtis's Treatise on Indian Diseases.

† ℞. Magnes. Vitriolat. ℥j.
Infus. Rosæ ℥x.
Syrup. Caryoph. ℥j. M.
ft. Haustus quarta quaque hora repetendus si erit necessitas.

‡ ℞. Infus. Quassiæ ℥jfs.
Tinct. Columb. ℥iij.
—— Card. C. ℥j. M.
ft. Haustus ter die sumendus.
Vel
℞. Pulv.

On recovery, the patient should pay particular attention to his diet, carefully abstaining from all things which might promote a return of the disease, and using only such as are light and nutritive, and which do not readily become acescent. He is likewise to guard against exposures to cold, should obstructed perspiration have given rise to the disease.

There are some people who are subject to periodical attacks of cholera, returning by intervals of a few weeks, producing for two or three days sickness and vomiting, increased heat of the skin, and quickness of the pulse, white tongue, and thirst. Sometimes, however, the bowels are torpid. Heaviness of the eyes and great disposition to drowsiness are commonly the precursors to the attack; and if a dose of calomel joined with some gentle purgative be then given, it will either considerably lessen its violence, or altogether prevent it.

Exercise, particularly on horseback, tonics, and the Bath or Cheltenham waters, are well calculated to afford relief, and prevent recurrences of the complaint in all such cases.

Of a LOOSENESS, or DIARRHŒA.

DIARRHŒA consists in a frequent and copious discharge of feculent matter by stool, accompanied by griping, and often, at first, with a slight degree of vomiting, but unattended either by inflammation, fever, or contagion. The presence of these, with tenesmus and an evacuation of blood and mucus, or hardened balls or scybala, instead of natural fæces, which prevail in dysentery, will always enable the practitioner readily to discern the two diseases from each other. It is to be distinguished from cholera morbus by the discharge not being bilious, and also by there being no vomiting of bile.

In diarrhœa there is evidently a morbid increase of the peristaltic motion; which morbid increase is the effect of a variety of causes applied either to the body in general, or acting solely on the parts affected.

Of the former may be noticed the application of cold to the surface of the body, so as to give a check to perspiration, and thereby determine the flow of blood more to the interior parts; as likewise passions of the mind, and certain diseases, as dentition, gout, fever, &c.

Of the latter may be enumerated, first, matters taken into the stomach, and acting either from their quantity, as in the case of overcharging the organ, or from their nature, on the state of the stomach itself, producing fermentation, as acid fruits, oily and putrid substances, and purgative medicines: secondly, matters generated in the body, and thrown into the intestines, as acrid bile, pancreatic juice, purulent matter, water in dropsy, worms, &c.: thirdly, mucous matter

℞. Pulv. Columb. gr. x.
—— Zingib.
Ferri Rubigin. āā gr. v.
Syrup. Rosæ q. s. M.
℔. Bolus bis quotidie capiendus.

poured from the mucous follicles of the intestines themselves, in consequence of an increased excretion, and producing what is known by the name of diarrhœa mucosa.

In diarrhœa, each discharge is usually preceded by a murmuring noise and flatulence in the intestines, together with a sense of weight and uneasiness in the lower part of the belly, which cease on the discharge taking place, but are again renewed before the one which is to succeed, ensues. As the disease advances, the stomach becomes affected, and sickness, nausea, and vomiting sometimes prevail, the countenance turns pale, and the skin is dry and rigid. If it continues for any length of time, universal emaciation, dropsy of the lower extremities, and relaxation of every part ensue, together with a great loss of strength.

In forming our prognostic in this disease, we are to be determined by the particular cause from which it arises; whether symptomatic of another disorder, and whether of a critical nature; as likewise by the degree of debility present in the system, and the length of time it has continued. Where it attacks pregnant women, it is always to be considered as attended with danger.

Dissections of diarrhœa, which have terminated fatally, have shewn that where it prevailed as a primary disease, ulceration of some portion of the intestines is the morbid change most usually met with; in which case, the inner membrane is often abraded for a considerable extent, and its muscular coat laid bare. They have likewise shewn that the follicular glands are the most frequent seat of such ulcerations, and that they now and then become cancerous, and assume the same appearance as scirrhus and cancer in other parts.

When it has been symptomatic, the morbid changes of the organs belong to the primary diseases, of which the diarrhœa is merely a symptom.

In the treatment of diarrhœa it will be necessary to attend to the following indications:

First, To obviate or remove the morbid cause:

Secondly, To suspend the increased action which constitutes the disease: and,

Thirdly, To restore the impaired tone of the parts.

When the disease has arisen from excess or repletion, or from crude or acrid matter in the stomach, the first indication may be answered by giving a gentle emetic of ipecacuanha. Vomits not only cleanse the stomach, but promote all the secretions. The day after the emetic, a dose of rhubarb,* joined with some aromatic, may be administered.

If it has proceeded from obstructed perspiration, in consequence of exposure to cold, we must then endeavour to restore this by nauseating

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* ℞. Pulv. Rhabarb. ℈j.
Aq. Cinnam. ℥jſs.
Tinct. Lav. C. ℥ſs. M.
ft. Hauſtus.

Vel

℞. Pulv. Rhabarb. ℈j.
—— Aromat. gr. v.
Syrup. Zingib. q. s. M.
ft. Bolus.

doses of ipecacuanha,* or of some antimonial preparation, as the pulvis antimonialis, pulvis Jacobi verus, or a solution of the antimonium tartarisatum, which may be repeated every two or three hours, in the manner which has been advised under the head of Simple Fever.

Along with these we may recommend a free use of diluents and demulcents, such as barley, rice, marsh-mallows, quince, or calcined hartshorn decoctions, mutton suet dissolved in milk, the emulsion of gum arabic, linseed-tea, or toast and water; which will serve both to wash out the offending matter, and to guard the intestines against its further action.

Where a septic fermentation is conspicuous (as in the case of scurvy and other putrid diseases) we must employ acids, such as ripe fruits, or the acidum sulphuricum in a diluted state.

When diarrhœa seems to arise or be kept up by a septic acid generated in the intestinal canal, and known by frequent eructations of air, diffusing a hot and disagreeable sensation upon the fauces and mouth, griping pains in the bowels, with dejections of a white chalky appearance, which, in passing off, occasion a hot smarting sensation at the end of the rectum, it will be necessary to have recourse to absorbents† joined with opiates. Alkalies will also be a useful class of medicines, and therefore we may advise frequent doses of the carbonate of potash (kali preparatum) dissolved in a little chamomile-tea throughout the course of the day, and at night an anodyne.

In most cases of diarrhœa, purgatives are found to prove injurious; but where it arises from an acrimony, which is extremely tenacious, and that adheres closely to the internal surface of the intestines, or is retained in their folds, these are the only remedies that can remove the disease, and ought therefore in such a case to be employed. The neutral salts will be the most proper purgatives on this occasion, and more particularly the magnesia vitriolata, natron vitriolatum, and soda phosphorata.

Should diarrhœa proceed from acrid or poisonous substances taken into the stomach, the patient must drink plentifully of diluting liquors,

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* ℞. Pulv. Ipecac. Comp. gr. iij.
—— Aromat. gr. vj.
Conserv. Rosæ q. s. M.
ft. Bolus quartis horis sumendus.

† ℞. Mistur. Cretac. ℥iv.
Spirit. Cinnam. ℥j.
Aq. Ammon. Pur. ℥j.
Tinct. Opii gutt. xxx.
ft. Mistura cujus sumat æger Cochl. ij. vel iij. pro re nata.

Vel

℞. Decoct. Corn. Cerv. ℔j. in die pro potu ordinario.

Vel

℞. Ammoniæ gr. x.
Aq. Menth. Sativ. ℥jfs.
Syr. Rosæ ℥j. M.
Tinct. Opii gutt. x.
ft. Haustus.

Vel

℞. Magnes. Alb. ℈ij.
Pulv. Rhabarb. gr. viij.
—— Aromat. gr. xij. M.
ft. Pulvis mane et vesp. sumendus.

Vel

℞. Pulv. e Cret. C. cum Opio gr. xv.
Conserv. Ros. q. s.
ft. Bolus bis in die capiendus.

with fat broths, to promote a vomiting; and to carry the remainder downwards, a purge of the oleum ricini may immediately afterwards be administered. To remove the irritation, small doses of tinctura opii may also be taken.

When gout, repelled from the extremities, falls on the intestines, and occasions a diarrhœa, it must again be solicited towards the extremities by warm fomentations, cataplasms, or blisters. The perspiration is at the same time to be promoted by drinking plentifully of wine-whey. If these means fail, a gentle dose of some stomachic purgative, such as the tinctura rhabarb. compos. may be given; after which, the absorbent mixture just recommended, may be used in frequently repeated doses, with an addition of ten or twelve drops of tinctura opii to each.

Should diarrhœa be occasioned by worms, which may be known from the sliminess of the stools, mixed with pieces of the decayed worms, medicines must be given to destroy and carry off these vermin, as advised under that particular head.

When it proceeds from a use of unwholesome water, and the situation of the person will not admit of its being changed, the addition of a small quantity of quick-lime, chalk, or the like, possibly may correct this effect.

The diarrhœa which attends on dentition should never be checked, unless it prevails in so high a degree as to prove hurtful to the child; in which case four or five grains of toasted rhubarb, with about eight or ten of prepared chalk or magnesia, may be given. This, if repeated three or four times, will generally correct the acidity, and put a stop to the griping stools. If it fails we may make trial of the mixture advised below.*

Should purgings return frequently in the time of teething, or upon the striking in of some eruption on the skin, it will be very useful to procure a small discharge behind the ears, or to apply a plaster of Burgundy pitch behind to the back. For the former purpose, some finely powdered Spanish flies may be rubbed on the part till a proper excoriation is produced, or we may draw a bit of narrow tape through a piece of the emplastrum cantharidis, and lay it close behind the ears.

A diarrhœa that is likely to prove critical or salutary, is by no means to be rashly stopped; but when it attacks pregnant women, the most powerful remedies ought immediately to be employed.

To answer the second indication in the cure of diarrhœa, viz. that of suspending the increased action which constitutes the disease, it will be proper to have recourse to opiates, which may either be given separately,

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* ℞. Pulv. Rhabarb. gr. xv.
Magnes. Alb. ʒfs.
Aq. Anethi ʒjfs.
Syrup. Rosæ ʒij.
Spirit. Ammon. Comp. gutt. xv. M.
ft. Mistura cujus sumantur Cochl. ij. vel iij. minima bis terve die, vel ut opus sit.

in small and repeated doses, so as to keep up a constant effect, or be combined with whatever other medicines* we administer.

The third indication is to be effected by a use of astringents, joined with aromatics and tonics. These remedies are especially adapted to those cases where the irritability of the intestines depends upon a loss of tone, and which may occur, either from debility of the whole system, or from causes acting on the intestines alone.

The astringents in most general use are, alum, logwood, catechu, and gum kino, which may be administered in any of the forms advised below.† In habitual and long-protracted diarrhœa, some patients have derived much benefit from drinking about a pint of lime-water a day, mixed with an equal quantity of milk, in which an ounce of gum arabic has been dissolved.

The tonics which are most likely to prove useful are, the Peruvian, angustura, simarouba, quassia, and cascarilla barks, columbo-root, preparations of iron, and chalybeate waters, together with a proper quantity of port wine taken daily. These may be administered as here recommended,‡ or as prescribed under the head of Dyspepsia.

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* ℞. Confect. Opiat. gr. xv.
Aq. Cinnam.
—— Pimento āā ʒvj.
Tinct. Kino ʒj.
—— Lav. C. ʒfs. M.
ft. Hauſtus 4ta vel 6ta quaq. hora sumendus.

† ℞. Alum. Rup. Pulv.
Terr. Catechu āā gr. x.
Opii gr. ſs.
Conſerv. Rcs. q. s. M.
ft. Bolus ter quarterve die capiendus.

Vel

℞. Gum Kino gr. x.
Alum. Rup. gr. xij.
Elect. Catechu q. s. M.
ft. Bolus 4ta hora ſumendus cum Cochl. ij. Miſturæ ſequentis.

Vel

℞. Miſturæ Cretac. ℥iv.
Extract. Lign. Camp. ʒſs.
Aq. Piment. ℥j.
Tinct. Kino ʒj.
Syr. Zingib. ʒij. M.

Vel

℞. Elect. Catechu ʒj.
Aq. Cinnam. ℥ij.
— Fontan. ℥iv.
Tinct. Kino ʒij.
—— Opii gutt. L. M.
ft. Miſtura.

‡ ℞. Cort. Caſcaril. Contus.
—— Simaroub. āā ʒij.
Coq. ex Aq. Fontan. Ibj. ad ʒviij.
Colat. adde
Spirit. Cinnam. ʒj.
Tinct. Kino ʒij. M.
ft. Miſtura cujus ſumat Cochl. magna iij. ter quaterve in die.

Vel

℞. Infus. Cort. Anguſt. ʒvj.
Tinct. Columb. ʒj
—— Catechu ʒij.
Spirit. Pimento ʒſs. M.
ft. Miſtura.

Vel

℞. Decoct. Cinchonæ ʒjſs.
Tinct. Ejuſd. C. ʒij.
—— Kino ʒj
—— Lav. C. ʒſs. M.
ft. Hauſtus 4tis horis ſumendus.

Vel

℞. Extract. Cort. Peruv.
Alum. Rup. āā ʒj.
Gum. Kino ʒſs.
Syr. Zingib. q. s. M.
ft. Maſs. in Pilulas No. 40 dividenda, quarum capiat æger iij. vel iv. ter in die.

From whatever cause a diarrhœa proceeds, whenever it is found necessary to check it, the diet ought to consist of rice boiled with milk, and flavoured with cinnamon, together with preparations of sago or Indian arrow-root, with an addition of red port, and the lighter sorts of meats roasted, as veal, lamb, or chickens. All kinds of fermented liquors should be avoided, except wine or brandy.

Those who are liable to frequent returns of this disease, either from a peculiar weakness, or too great an irritability of the bowels, should live temperately, avoiding crude summer fruits, most kinds of vegetables, all unwholesome food, and meats of hard digestion. They ought, likewise, to beware of cold, moisture, or whatever may obstruct the perspiration, and they should wear flannel next to the skin.

Of the DIABETES.

WEARINESS and disinclination to motion or exertion, with the feeling of weakness, dryness and harshness of the skin, costiveness, great thirst, a voracious appetite, accompanied by an apparent defect in the process of chylification, gradual emaciation of the whole body, and a frequent discharge of urine, containing a large proportion of saccharine and other matter, which is generally voided in a quantity far exceeding that of the aliment or fluid introduced, are the characteristics of this disease. It has been usual to apply different names to it, as the diabetes mellitus, wherein the urine is of a fragrant smell, and of the colour and taste of honey, and the diabetes insipidus, with limpid urine, not sweet; but some have considered this division as more fanciful than real, and more systematic than useful.

Those of a shattered constitution, and those who are in the decline of life, are most subject to its attacks. The few cases which have occurred to me in practice all arose in persons who had addicted themselves to spirituous liquors, and who at the same time fared hard, and were much exposed to cold. It not unfrequently attends on hysteria, hypochondriasis, dyspepsia, and asthma; but it is always much milder when symptomatic, than when it appears as a primary affection.

Diabetes may be occasioned by a use of strong diuretic medicines, intemperance of life, and hard drinking, excess in venery, severe evacuations, immodcrate use of acid drinks, excessive labour joined to a poor vapid diet, and the depressing passions, or by any thing that tends to produce an impoverished state of the blood, or general debility. In some cases it has arisen from an exposure to cold and suppressed perspiration. It has however taken place, in many instances, without any obvious cause.

That which immediately gives rise to the disease, has ever been considered as obscure, and various theories have been advanced on the occasion. It has been usual to consider diabetes as the effect of relaxation of the kidneys, or as depending on a general colliquation of the fluids. Dr. Richter, professor of medicine in the university of Gottingen, sup-

poses the disease to be generally of a spasmodic nature, occasioned by a stimulus acting on the kidneys; hence a secretio aucta urinæ, and sometimes perversa, is the consequence. Dr. Darwin thinks that in diabetes, there is another passage from the intestines to the bladder, besides that of the sanguiferous system through the kidneys, and supposes it is effected by the retrograde motions of the urinary branch of the lymphatic system; which doctrine, although it did not escape the censure of the best anatomists and experimental physiologists, met, nevertheless, with a very favourable reception on its being first announced. The late Dr. Cullen offered it as his opinion, that the proximate cause of this disease might be some fault in the assimilatory powers, or in those employed in converting alimentary matters into the proper animal fluids; which theory has since been adopted by Dr. Dobson, and still later by Dr. Rollo, surgeon-general to the royal artillery. The liver has been thought by some to be the chief source of the disease; but diabetes is seldom attended with any affection of this organ, as has been proved by frequent dissections, and when observed, it is to be considered as accidental.

My own opinion as to the cause of diabetes mellitus is, that it consists in a perverted or deranged action of the kidneys, and that it is by virtue of this action that the saccharine matter in the urine is produced.

The primary seat of the disease is far from being absolutely determined in favour of any hypothesis yet advanced; but from an attentive consideration of all the circumstances, the weight of evidence appears to induce the majority of practitioners to consider diabetes as depending on a primary affection of the kidneys.

The morbid state in which these organs are always found on dissection, certainly strengthens the opinion that they are the primary seat of the disease. From the peculiar matter which is elaborated by the kidneys being secreted in twice its usual quantity, we are at least induced to conclude that their action is very considerably increased. It must, however, be acknowledged that the excessive increase of appetite, accompanied with an apparent defect in the process of chylification, which are the usual attendants on diabetes, seem to demonstrate that some derangement exists also in the digestive organs. Possibly this may be secondarily.

Dr. Rollo informs us in his ingenious publication, that from having duly investigated the most remarkable circumstances and changes which took place during the cure in several cases of this disease, he thinks himself authorized to draw the following inferences:

1st, That the diabetes mellitus is a disease of the stomach, &c. proceeding from some morbid change in the natural powers of digestion and assimilation.

2d, That the kidneys, and other parts of the system, as the head and skin, are affected secondarily, and generally by sympathy, as well as by a peculiar stimulus.

3d, That the stomach affection consists in an increased action and

secretion, with a vitiation of the gastric fluid, and probably in too active a state of the lacteal absorbents.

4th, That the cure of the disease is accomplished by regimen, and medicines preventing the formation of sugar, and diminishing the increased action of the stomach.

5th, That confinement, an entire abstinence from every species of vegetable matter, or a diet solely of animal food, with emetics, hepatized ammonia, and narcotics, comprehend the principal means to be employed.

6th, That the success of the treatment in a variety of cases, in a great measure, establishes the five preceding inferences.

7th, That the saccharine matter of the disease is formed in the stomach, and chiefly from vegetable matter, as has been shewn by the immediate effects produced by the abstinence from vegetable matter and the use of animal food solely.

8th, That acescency is predominant in diabetic stomachs, which continues even some time after the entire abstinence from vegetable matter, and after the formation of sugar; and that while such acescency remains, the disposition to the disease may be supposed to continue.

9th, That the saccharine matter may be removed in three days, and, by avoiding vegetable matter, will not again be reproduced; but when the disease and the disposition to it will be finally removed, cannot be stated with accuracy. Such knowledge may, however, be acquired in those cases where the patients adhere correctly to rules.

10th, That there are two circumstances to be considered in this disease, which we may separate in the progress of the treatment; as it has been shewn, that though the formation of sugar was prevented, yet the increased action of the stomach remained, and maintained the defect of assimilation, which prevented nutrition. Hence two objects occur in the cure; for it is not yet determined whether the preventing the formation of sugar by an entire abstinence from vegetable matter, and the use of animal food with fats, if properly persevered in, might not ultimately comprehend the other, namely, the removal of the morbid action of the stomach.

11th, That the lungs and skin have no connexion with the production of the disease.

12th, That the quantity of urine is probably in proportion to the quantity of liquids taken in, and has but little dependence on an absorption of fluids from the surface of either skin or lungs.

13th, That though the disease has been shown to consist in an increased morbid action of the stomach, and probably too great a secretion, with vitiation of the gastric fluid; yet the peculiar or specific condition of either, as forming the disease, is acknowledged to lie in obscurity, and must remain so, until the physiology of healthful digestion is properly explained and established.

The following are the objections which have been made to Dr. Rollo's theory of diabetes:

1st, That saccharine matter has not been detected in the blood, or in the stomach.

2dly, That the disease often shews symptoms of dyspepsy or weakness of digestion.

3dly, That the stomach affection may be sympathetic of diseased kidney, from the intimate consent between both; and,

4thly, That the kidneys may be capable of forming or secreting matter under a peculiar action, similar to the breasts of women.

In answer to the first of these objections, Dr, Rollo has replied, that it is difficult to ascertain the exact period in the process of digestion, when this change may be looked for, and therefore an emetic might fail in affording the necessary contents. With respect to the blood, Dr. Dobson affirmed the existence of saccharine matter in diabetic blood. In several instances, the serum was turbid and wheyish, and it did not, on standing, undergo the usual changes of animal matter.

To the second objection which has been made to Dr. Rollo's doctrine, he answers, that the increased action of the stomach is of a morbid kind, and connected with debility: being, therefore, irregular and imperfect, it does not accomplish digestion.

To the third objection, Dr. Rollo has replied, that the stomach affections which exist in diabetes, are entirely different from those which take place in consequence of primary morbid conditions of the kidney. He observes, besides, that most cases of the disease have been preceded by stomach derangement, or have been produced by causes immediately operating on the stomach.

To the fourth objection he observes, that the kidneys are not secreting organs, but separating only, and that a much greater change in their structure than has ever been found, must take place, before they could become capable of secreting saccharine matter. He further notices, that in some instances of diabetes, the structure of the kidneys has not been visibly changed.

In support of the doctrine which Dr. Rollo advances, he has used the following arguments:

1st, The fact, that a stomach affection generally precedes the urinary characteristic symptoms of the disease.

2dly, The fact, that a stomach affection always attends the disease, which materially differs from that sympathetic of primary kidney affection.

3dly, The fact, that a diet of animal food, with an entire abstinence from vegetable or other matter capable of forming sugar in the stomach, removes speedily the general symptoms, the saccharine matter, the quantity of urine, and its unnatural state.

4thly, The fact, that dissection has shewn no morbid condition of the kidneys, but what may be referrible to a continuance of increased action from the application of a simple stimulus, and probably sympathy, augmenting merely the capacity of their vessels.

Such are the arguments brought forward by Dr. Rollo in favour of his theory; but a still stronger than any of these is the success which has attended his mode of treatment, and which on his recommendation

has been pursued by other practitioners with a happy effect in this disease.

Diabetes sometimes comes on slowly and imperceptibly, without any previous disorder, and it now and then arises to a considerable degree, and subsists long without being accompanied with evident disorder in any particular part of the system, the great thirst which always, and the voracious appetite which frequently occur in it, being often the only remarkable symptoms; but it now and then happens, that a considerable affection of the stomach precedes the coming on of the disease, and that in its progress, besides the symptoms already mentioned, there is great dryness of the skin, with a sense of weight in the kidneys, and a pain in the ureters, and the other urinary passages. The temperature of the body is usually below the standard of health. The spirits are depressed, the disposition is equally indifferent to study or amusement, and there is evidently a decline of mental energy, with a loss of the power of virility. Some morbid change in the alvine excretion always accompanies the diabetic habit, and costiveness is perhaps the most common of these; for, in some instances, the bowels have been so remarkably torpid, that even the most powerful medicines, in large doses, produced but a trifling effect. Very frequently some degree of inflammation and swelling about the external orifice of the urethra is to be observed.*

It has been remarked that diabetes is often preceded or accompanied with a pulmonic affection; and we are told by Dr. Bardsley,† that he does not recollect an instance of the disease which was not attended with some affection of the chest.

Under a long continuance of the disease, the patient becomes much emaciated, the feet œdematous; great debility arises, and an obscure fever, with all the appearances of hectic, prevail. In point of number, the pulse is very much diversified: in most cases it is quicker than natural, but sometimes it is below the common standard; but whether it be quick or slow, it is generally such as to denote great debility in the system. In some cases vision becomes very indistinct, and the patient is troubled with vertigo.

The urine in diabetes, from being at first insipid, clear, and colourless, soon acquires a sweetish or saccharine taste, its leading characteristic; and when subjected to experiment, a portion of saccharine matter is generally to be extracted from it.

In some instances, the quantity of urine is much greater than can be accounted for from all the sources united. Cases are recorded, in which from twenty-five to thirty pints were discharged in the space of a natural day, for many successive weeks, and even months; and in which the whole ingesta, as was said, did not amount to half the weight of the urine. To account for this overplus, it has been alleged that water is absorbed from the air by the surface of the body, as also that an extraordinary quantity of water is compounded in the lungs themselves.

Dr. Darwin is of opinion that in the aqueous diabetes the cutaneous

* See cases of Diabetes by R. Watt, p. 159.

† See his Medical Reports.

absorbents frequently imbibe an amazing quantity of atmospherical moisture; and although it has been mentioned by Dr. Rollo that one patient whom he weighed, after being ten minutes in a warm bath, did not weigh heavier on his leaving it, still he suspects, that if the bath be made very hot, perhaps much above animal heat, the bather may perspire more than he absorbs, and become in reality lighter. In a bath of a moderate heat, provided the patient has been previously exhausted by abstinence or fatigue, he may be likely, Dr. Darwin thinks, to absorb much; but if his system be already full of fluids, from the food and liquids which he has previously eaten and drank, he may not then absorb any thing.

That the cutaneous absorbents can imbibe such a quantity of atmospheric moisture, as to account for the surplus of urine over the aliment or fluid which are taken, I am by no means inclined to admit.

It has been usual to regard this disease as always attended with great difficulty of cure, and no inconsiderable degree of danger, particularly where it attacks persons advanced in years, or whose constitutions have suffered much by any debilitating cause whatever, especially hard drinking; but if we are to credit Dr. Rollo's report, which seems both candid and ingenious, and has indeed been confirmed by the testimony of other practitioners, who have adopted the mode of treatment he recommends, we may presume that it need not in future be regarded in so unfavourable a light, and that cures may be effected under the most unpromising circumstances, provided a rigid compliance with his plan is observed.

Great abatement of the thirst and extraordinary desire for food, the skin becoming soft to the touch and perspirable, the bowels more lax or regular, the urine being voided less frequently and in smaller quantity each succeeding day, being at the same time of a more natural colour, taste, and smell, the dyspeptic affection much diminished, and bodily strength somewhat recruited, together with a return of mental energy, are to be regarded as very favourable symptoms; whereas the contrary denote a fatal termination sooner or later.

Dissections of diabetes have usually shewn the kidneys to be much affected. In some instances they have been found in a loose, flabby state, much enlarged in size, and of a pale ash colour; in others they have been discovered much more vascular than in a healthy state, approaching a good deal to what takes place in inflammation, and containing in their infundibula, a quantity of whitish fluid, somewhat resembling pus, but without any sign of ulceration whatever. At the same time that these appearances have been observed in their interior, the superficial veins on their surface were found to be much fuller of blood than usual, forming a most beautiful net-work of vessels, the larger branches of which exhibted an absorbent appearance. In many cases of dissection, the whole of the mesentery has been discovered to be much diseased, and its glands remarkably enlarged; some of them being very hard, and of an irregular texture; others softer, and of an uniform spherical shape. Many of the lacteals have likewise been seen considerably enlarged. The liver, pancreas, spleen, and stomach,

are in general perceived to be in a natural state; when they are not so, the occurrence is to be considered as accidental. The bladder is now and then found to contain a quantity of muddy urine: in some cases, its coats are much thickened, and its size less than natural.

The fat within the thorax, abdomen, and pelvis, in some instances has seemed entirely converted into a gelatinous-like matter, somewhat of an amber colour, and when slightly pressed between the fingers, did not appear unctuous. The subcutaneous fat is found in general much diminished.

The treatment of diabetes has hitherto been conducted on the principles of diverting the increased discharge elsewhere, and afterwards of restoring the tone of the parts.

The first indication has been attempted by a use of remedies which open the pores, such as emetics, diaphoretics, the warm bath of about 96 or 98 degrees of heat, additional clothing, or the removal to a warm climate. As diaphoretics, the pulvis ipecac. compos. and antimonials, combined with opium, have principally been employed. For the purpose of diverting the increased discharge, blisters are sometimes applied over the region of each kidney in succession, and the ulcerated parts kept open afterwards by the unguentum cantharidis or sabinæ.

The second indication has been aimed at by astringents and tonics. The astringents which have been most used are, alum, zincum vitriolatum, gum kino, catechu, and the sulphuric and nitric acids; but the first and second seem to be the most efficacious, and may be combined together as below,* or be given separately. The tonics generally employed are the different preparations of bark, myrrh, and chalybeates, as advised under the head of Dyspepsia, together with cold bathing.

The Bristol Hot-well waters when drank at the fountain-head, have long been celebrated for their good effects in this disease, and have by many been looked on as a kind of specific; they may therefore be resorted to, if the situation and circumstances of the patient will admit of it; but if not, he must be content to substitute lime-water, which may be taken in the quantity of a pint or quart a day, mixed with an equal proportion of milk. By dissolving about half an ounce of gum arabic in each pint of milk, some further advantages may possibly be derived.

The mephitic alkaline water has been much recommended in this disorder, and it is probable that Schweppe's soda-water may be of service, as it is well calculated to relieve acidity in the stomach. The soda will be preferable to the vegetable alkali, as being less likely to act on the kidneys.

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* ℞. Alum. Rup. gr. xij.
Zinc. Vitriol. gr. ij.
Conserv. Rosæ q. s.
Opii gr. ss. M.
ft. Bolus ter quaterve die sumendus cum
Aquæ Calcis ℥iv.

Administering large doses of opium has been found highly useful in this disease, in certain cases.

The tincture of cantharides is a medicine which has sometimes been employed in diabetes.

Rubbing the skin with oil, or any adhesive liniment, so as to put a stop to the supposed absorption of fluids thereby, has been much recommended in diabetic cases. From experiments made by Dr. Gerrard of the Liverpool Infirmary, as well as by Dr. Rollo, it does not appear, however, that there is any absorption of fluids by the skin in this disease, for the body gained nothing by immersion in a warm bath: this remedy seems therefore of a doubtful nature.

To assist the effects of the means which have been advised, gentle exercise on horseback, along with frequent friction over the kidneys, by means of a flesh-brush or flannel, when not in a blistered state, together with warm clothing next to the skin, ought to be used. The patient is at the same time to abstain from all strong drink, to make use of animal food as much as possible, instead of vegetable, and by all means to avoid external cold, as any thing that checks the perspiration cannot fail to determine a large quantity of fluid to the kidneys. While we pursue these steps, we are to obviate costiveness, and keep the body perfectly open, either with rhubarb or an infusion of senna.

When diabetes is symptomatic of hysteria, hypochondriasis, or asthma, the proper remedies for the primary disease should be administered.

The mode of treatment which has just been laid down is, with some small improvement, that which has been pursued by most practitioners; but it must be acknowledged to have proved in many instances very ineffectual. This being the case, it is proper to make mention of the plan recommended by Dr. Rollo, which is said to have often performed a cure under the most unpromising circumstances.

The indications to be attended to, he supposes to be, to destroy the saccharine process going on in the stomach, to promote a healthy assimilation, to prevent a supposed increased absorption by the surface, to diminish the increased action, and to change the imagined derangement of the kidneys.

To answer these indications, Dr. Rollo enjoins a diet consisting wholly of animal food, abstaining rigidly from every kind of vegetable matter from which sugar may be produced; he likewise enjoins hepatized ammonia to be taken daily, in the doses hereafter to be mentioned; the skin to be anointed with hog's lard; exercise to be avoided; antimonial wine with opium to be taken at night; an ulceration about the size of half-a-crown to be formed opposite to each kidney; and the bowels to be kept open by aloes and soap.

Dr. Rollo at first was in the habit of using kali sulphuratum; but was induced to substitute the hepatized ammonia, under the supposition that the alkali of the former had an improper effect on the kidneys.

We are informed by Mr. Cruikshank, chemist to the Ordnance, in some observations added to Dr. Rollo's publication, that the hepatized

ammonia, which promises to be a valuable medicine, is easily prepared by making a stream of pure hepatic gas pass through the aqua ammon. Pharm. Londinensis, until no further absorption is perceived, or until the alkali is saturated. The hepatic or sulphurated hydrogene gas should be obtained for this purpose from artificial pyrites, or sulphuret of iron, and the muriatic acid We are further informed, that the easiest method of making the artificial pyrites, is to raise a piece of iron in a smith's forge to a white heat, and then to rub it against the end of a roll of sulphur; the iron at this temperature immediately combines with the sulphur, and forms globules of pyrites, which should be received into a vessel filled with water. Those globules are to be reduced to powder, and introduced into the proof, to which a sufficient quantity of muriatic acid is to be added. The dose to an adult should not at first exceed three or four drops, three or four times a day, and this dose is to be gradually increased, so as to produce slight giddiness. It should be dropped from the phial at the time of using it into a little distilled water, and be taken immediately. When we cannot procure hepatized ammonia, we must be content to substitute the carbonate of ammonia, which may be given in the form of pills, ordering about twelve to be taken daily, each containing about four grains of the ammonia.

A case of diabetes mellitus is recorded in the thirteenth volume of the Medical Journal, by Mr. Earnest, surgeon to the Sheffield General Infirmary, which was successfully treated by putting the patient on a diet consisting principally of animal food, with a generous allowance of porter, giving at the same time the nitric acid in the proportion of from one to three drachms of the acid to two pounds of water, with about an ounce of sugar, daily. We are further informed by him, that in three other cases of excessive polydipsia he had known the nitrous acid essentially useful. Under a failure of the other means which have been noticed, it will therefore be advisable to pursue this plan.

The nitric acid, no doubt, is productive of considerable advantage in mitigating the thirst and heat, and thereby lessening the quantity of urine; but of itself, it ought to be considered as incompetent to destroy the saccharine impregnation of this fluid, or to arrest the other characteristic symptoms of the disease. A total abstinence from all vegetable food is likewise absolutely necessary.

Numerous indeed are the cases now recorded by different medical writers, very clearly demonstrative of the great efficacy of the animal regimen in diminishing the quantity and changing the properties of diabetic urine, and in relieving the concomitant circumstances; and from the repeated observations and experiments which have been made by some of our most eminent physicians, we may, I think, be justified in drawing the inference, that an abstinence from vegetable, and the employment of the animal food, together with the nitric acid, opiates, blisters to the loins, and the warm or tepid bath, comprehend the general and most successful method of cure, and are capable of removing the disease in question in its incipient state, when unaccompanied with any dangerous organic affection; and that even in the most acute and aggravated instances of the complaint, a steady perseverance in the proper regimen

will arrest the progress of the diabetic symptoms, and bring the patient into a state of convalescence; but that the bark, astringents, and alkalies, either alone or combined with sulphur (such as the hepatized ammonia,) afford little assistance in subduing diabetes, or even arresting the progress of its characteristic symptoms.

In order to restore the patient to general health and strength, an admixture of vegetable and animal food is to be gradually and cautiously entered upon, as soon as ever the saccharine impregnation of the urine, and the voracious appetite, have disappeared. After the cessation of the diabetic symptoms, great attention should be paid to the state of the primæ viæ, as the tone of the stomach remains for some time much impaired, and the bowels also become torpid, and are liable to inflammation, if evacuations be not speedily procured.

The phenomena which diabetes mellitus exhibits in its progress, and the great degree of vascularity and enlarged size of the kidneys, which are observed on dissection, have induced some to suppose that an inflammatory action takes place in these organs; which view of the disease, if well founded, would evidently direct to a mode of treatment the very reverse of what has hitherto been pursued. Instead therefore of tonics, astringents, cold bathing, and a stimulating diet of animal food, a mild antiphlogistic regimen, with occasional evacuations, and topical remedies, suited to the habit of the patient and the degree of local affection, would promise they think,* to fulfil the intentions of the practitioner with success.

Several cases of diabetes which were treated successfully by an antiphlogistic regimen, and very copious depletion by venesection, employed under the most unpromising circumstances, such as a feeble low pulse, loss of strength and spirits, cold and œdematous extremities, &c. are recorded by a late writer,† and they seem greatly to support the opinion, that an inflammatory action does really take place in the kidneys of those labouring under this disease.

ORDER IV.

VESANIÆ.

IMPAIRED judgment, without pyrexia or coma, is the character of this order.

Of MADNESS, or MANIA.

THE definition of mania which has hitherto been generally given, is delirium unaccompanied by fever; but this does not seem altogether correct, as a delirium may prevail without any frequency of the pulse, or fever, or without mania, as happens sometimes with women in the hysteric disease.

* See lxvii of the Medical and Chirurgical Review.
† See Cases of Diabetes by Mr. Robert Watt of Glasgow.

Some have attempted to give a definition of mania, by making it consist in the raising up in the mind, images not distinguishable from impressions on the senses; or, as it may be expressed, intensity of idea, converting imagination into implicit belief, and producing incorrectness of association, incoherence of expression, or incongruity of action. I think mania may be termed a false perception of things, displayed most generally in the opinion formed by the patient of his nearest friends; in a want of due connection of the train of thought, marked by an incoherence or raving; and in a resistance of the passions to the command of the will, accompanied, for the most part, with a violence of action, and furious resentment at restraint.

In mania, the mind is not perfectly master of all its functions: it receives impressions from the senses, which are very different from those produced in health; the judgment and memory are greatly impaired, if not wholly lost; and the irritability of the body is much diminished, maniacs it is supposed, being capable of resisting the usual morbid effects of hunger and watching. It has also been a generally received opinion, that they can likewise resist the morbid effects of cold; but we are assured by Mr. Haslam,* apothecary to Bethlem Hospital, that they possess no such exemption. He tells us, that those under strict confinement in that receptacle, are particularly subject to mortifications of the feet; and that those who are permitted to go about in the hospital, are always to be found as near to the fire as they can get, during the winter season.

Mr. Haslam's observations is confirmed by Professor Pinel;† and we are cautioned by him against the belief, that the power of resisting cold is universally great. He affirms, that seldom a year has passed, during which no fatal accident has taken place, from the action of cold upon the extremities, at the Asylum of Bicêtre in Paris, to which he is physician.

Great insensibility certainly prevails in some states of madness, and a degree of cold which would create much uneasiness to persons of sound mind, might not incommode maniacs; but experience has shewn, that they suffer equally from any severity of weather. Some indeed refuse all covering; but these occurrences are not common; and it may be presumed, that, by a continued exposure to the atmosphere, such persons might sustain with impunity, a low temperature which would be productive of serious injury to those who are clad according to the exigencies of the season. Such endurance of cold is probably more the effect of habit, than of any condition peculiar to insanity.

Some writers contend, that insanity is a disease wholly of the mind, and not of the body; whereas others suppose, that the degree of mental deception, which constitutes mania may also arise from disorganization, or morbid action of some part of the body; which supposition is indeed supported by the appearances to be observed in the head on dissection.

* See his Observations on Madness.
† —— Treatise on Infanity.

There are two species of madness, viz. the melancholic, and furious. In both these states, the association of ideas is equally incorrect. Between melancholic and furious madness there seems however to exist an intermediate species of the disease. Great eccentricity or singularity, low spirits, and violent tendency to immoral habits, notwithstanding the inculcation of the most correct precepts, and the force of virtuous example, may be regarded as only slighter shades of the disorder. By some writers the disease has been distinguished into many varieties; but probably the best division would be into chronic and acute, periodical and habitual.

Madness is occasioned by affections of the mind, such as anxiety, grief, the love of an absent object, sudden frights, violent fits of anger, the disappointment of ambition, prosperity humbled by misfortune, religious terror or enthusiasm, the frequent and uncurbedi ndulgence of any passion or emotion, and by abstruse study. In short, it may be produced by any thing that effects the mind so forcibly as to take off its attention from all other affairs. A very frequent cause of insanity arises from the pain of some imaginary or mistaken idea, which may be termed hallucinatio maniacalis. Violent exercise, frequent intoxication, a sedentary life, the suppression of periodical and occasional discharges and secretions, repelled eruptions, injuries and malconformation of the head, excessive evacuations, mercury largely and injudiciously administered, and paralytic seizures, are likewise enumerated as remote causes. Mania sometimes arises in consequence of painful protracted parturition. Certain diseases of the febrile kind have been found to occasion madness, where their action has been very violent, or accompanied by delirium.

In some cases, mania proceeds from an hereditary predisposition; and of all the maladies to which the human frame is liable, and which can be entailed on posterity, mental derangement is surely the most deplorable. It is an indisputable fact, that the offspring of insane persons are more liable to be affected with insanity, than those whose parents have enjoyed sound minds; which shews that a predisposition to the disease may be entailed by either parent. Moreover, it frequently occurs, that the descendants from an insane stock, although they do not exhibit the broad features of madness, shall yet discover propensities equally disqualifying for the purposes of life, and destructive of social happiness.

From the hereditary predisposition entailed by persons of an insane stock, the great pressure of the times, and the various exciting causes which have been enumerated, mania appears to be a disorder of much more frequent occurrence than formerly.

All inquiries respecting the proximate cause of mania are involved in such a cloud of obscurity, that I shall not venture to advance any opinion on it. Many physicians have attempted indeed to account for the production of insanity from the morbid appearances observed on dissection; but these vary exceedingly in different cases, and even when they are the most marked and constant, they only serve to denote the progress and ultimate effects, rather than the actual condition wherein the disor-

der consists. We only know for certain, that in the majority of maniacal persons that have been opened after death, more or less organic injury of the brain has been discovered, and that the said organic injury seems to be, for the most part, the consequence of an inordinate determination of blood to the head.

Two constitutions are particularly the victims of madness, the sanguine and melancholic; by the difference of which, its appearance is somewhat modified. It attacks persons of all complexions and colours of hair; but out of 265 patients, who were examined by Mr. Haslam,* at Bethlem Hospital, 205 were of a swarthy complexion, with dark or black hair; the remaining 60 were of a fair skin, and light brown or red haired.

The most common form of insanity is the intermitting, or that in which the paroxysms of the disease are divided by lucid intervals. The accession of the paroxysms is far from being regular, but most usually they begin soon after the summer solstice, continue with more or less violence during the heat of summer, and terminate towards the decline of autumn. Mania comes on at different periods of life; but in the greater number of cases it makes its first attack between thirty and forty years of age, probably because people at this period are more liable to be acted upon by the remote causes of the disease, or that a greater number of such causes are then applied. At this age, people are generally established in their different occupations; are probably married, and have families; their habits are strongly formed, and the interruptions of them are consequently attended with greater anxiety and regret. Under these circumstances, they feel the misfortunes of life more exquisitely.

Sometimes mania, however, instead of being only temporary, or occurring in paroxysms, which go off and return again at certain periods, continues during the whole of the person's life without any intermission, and the patient sinks at last under the violence of the conflict, without any abatement of the symptoms; or a state of perfect idiotism ensues.

In no two patients is the disease ushered in, or continued, with precisely the same appearances: for the different propensities and habits of different patients lead of necessity to a difference of idea and of expression in each. The precursory symptoms of a maniacal paroxysm are, however, very frequently as follow. The patient complains of a sense of tightness at the region of the stomach, want of appetite, costiveness, and a sensation of heat in the bowels. He is subject to a kind of uneasiness, which he cannot describe or account for; experiences a degree of fear that sometimes amounts to terror, and feels either little disposition or absolute incapacity to sleep. Soon after these appearances, incoherence and incongruity of idea are betrayed in his outward conduct, by unusual gestures, and by extraordinary changes in the expression and movements of his countenance. He generally holds his head erect, and fixes his eyes and attention upon the heavens. He speaks with a deep hollow voice, walks with a quick and precipitate

* See his Observations on Madness.

step, then stops suddenly, as if arrested by the most interesting and profound contemplations. Some maniacs are remarkable for great humour and mirth, which they express by fits of loud and immoderate laughter. There are others again whose taciturnity is perpetual; who express their afflictions by tears, or who sink, without a tear, under the distressing influence of solitary anxiety. This happens in melancholia, to which there are usually added, fondness for solitude, timidity, fickleness of temper, great watchfulness, flatulency in the stomach and bowels, costiveness, and a small weak pulse. Furious madness is marked by severe pains in the head, redness of the face, noise in the ears, wildness of the countenance, rolling and glistening of the eyes, grinding of the teeth, loud roarings, violent exertions of strength, absurd incoherent discourse, unaccountable malice to certain persons, particularly to their nearest relatives and friends, a dislike to such places and scenes as formerly afforded particular pleasure, a diminution of the irritability of the body with respect to the morbid effects of cold, hunger, and watching, together with a full quick pulse.

Insane persons are said to be generally worse in the morning; but perhaps this is not so generally the case as has been supposed. In many instances, at the commencement of the disease, they are more violent in the evening, and sometimes so the greater part of the night. It is indeed well known that the majority of patients of this description have their symptoms aggravated by being placed in a recumbent position. They seem of themselves to avoid the horizontal posture as much as possible, when they are in a raving state, and, when so confined as that they cannot be erect, will support themselves on the breech.

Of the organs of sense which become affected in those labouring under insanity, the ear has been observed particularly to suffer: few lunatics become blind, but numbers were noticed by Mr. Haslam to be deaf; and those who were not actually deaf, were troubled with difficulty of hearing and tinnitus aurium.

Mania is to be distinguished from phrenitis, by the absence of pyrexia and head-ach; and from delirium, by the state of the pulse, and not being conscious of external objects when roused, and even then the person soon relapses into a state of inattention; whereas in mania he is frequently sensible, and is often planning the means of preventing or revenging supposed injuries.

An intermittent fever supervening madness of long standing, has been known in some instances to have proved a cure for the disease, the senses having returned when the fever terminated.

When madness has arisen in consequence of some other disorder, and when its attacks are slight, and do not return very frequently, a radical cure may possibly be effected; but when it takes place in consequence of an hereditary disposition, or is attended with great melancholy, and a fixed attention to one particular object, be it love or religion, we should not entertain much hope. Patients who are in a furious state, recover in a much larger proportion than those who are melancholic. Insane persons are found to recover in proportion to their youth. When the disease attacks persons advanced in life, the prospect of a recovery

is but slight. The chance of cure likewise appears to be less in proportion to the length of time which the disorder has continued. Where insanity supervenes on epilepsy, or palsy, a cure is seldom effected. When the furious state is succeeded by melancholy, and the violent paroxysm returns after this shall have continued a short time, the hope of recovery is but small.

Insanity, after continuing for a longer or shorter period without relief, commonly terminates in fatuity. This destruction of mind is almost always incurable. Sometimes, however, young persons, after having remained in a state of complete fatuity for months, or even years, are suddenly seized with a paroxysm of insanity, which restores them to reason.

It has been observed by those who superintend mad-houses, that the number of females brought in annually considerably exceeds the number of males. The natural processes which women undergo of menstruation, parturition, and of preparing nutriment for the infant, together with the diseases to which they are subject at these periods, and which are frequently remote causes of insanity, as likewise the sedentary life they usually lead, and the exquisiteness of their feelings, may perhaps serve to explain their greater disposition to this malady. Women affected with mania in consequence of a puerperal state, recover in a larger proportion than patients of any other description: indeed the insanity subsequent to parturition is generally curable, if the curative attempts be rational. From whatever cause this disease may be produced in women, it is to be considered as unfavourable to recovery, if they are worse at the period of menstruation, or have their catamenia either in very small or immoderate quantities.

A curious circumstance attending mania is, that by its access other diseases are often cured. Some cases of anasarca, which were removed by an attack of mania, are mentioned by Dr. Darwin;* all of which (he thinks) were affected by the increased energy of some parts of the system, owing to the addition of volition to the sensorial powers of irritation or association.

Dissections of maniacal cases frequently shew an effusion of water into the cavities of the brain; but in some cases we are able to discover evident marks of previous inflammation, such as thickening and opacity of the tunica arachnoides and pia mater, and adhesions of the pericranium to the skull. In a few instances a preternatural hardness of the substance of the brain has been observed, with now and then tumours and inequalities of the cerebrum.

In most cases there will be found some organic injury done to the brain, and occasioned probably by an inordinate determination of blood to the head, as has been before observed.

From the anatomical observations of Dr. Greding it appears, that the greater number of insane people fall into a state of atrophy or decay towards the close of their life, as it was observed that of one hundred maniacs, sixty-eight died in this way. Of all diseases, hydrothorax appeared to be that to which maniacs are more subject, for out of one

* See vol. iii. page 175, of Zoonomia.

hundred of them, seventy-six laboured under it. We are informed by the same gentleman, that consumption from an ulcerated state of the lungs appears to be another disease which frequently terminates the existence of insane people, as it was found that of one hundred maniacs, there were forty who laboured under phthisis pulmonalis.

Mr. Haslam has observed that maniacs are more liable to attacks of apoplexy and palsy than other diseases.

The treatment of mania consists in the management of the patient, humouring the subject of the mental disease, and the aid which medicine may afford; but the first is of the greatest consequence.

It should always be the object of the superintendant and keeper, to gain the confidence of the patient, and to awake in him proper respect and obedience, which is to be effected by discipline of temper and dignity of manners. Tyrannical severity may excite fear in the lunatic, but it will be mingled, probably, with contempt. In the management of insane persons, the superintendant must endeavour to obtain a complete ascendency over them. When this is once effected, he will be enabled, on all future occasions, to direct and regulate their conduct according as his judgment may suggest. He should possess firmness, and when occasion may require, should exercise his authority in a peremptory manner. He should never threaten but execute, and when the patient has misbehaved, should confine him immediately; and as example operates more forcibly than precept, it will be best to order the delinquent to be confined in the presence of the other patients, be the institution a public or private one. Such a conduct will display authority; and the person who has misbehaved, becomes awed by the spectators, and more readily submits. When the patient is a powerful and strong man, two or more keepers should assist in securing him; for when the maniac finds his strength or skill in the contest prevail, he is sure to make the most of such an advantage, and the consequence of his victory has sometimes proved fatal to the keeper.* Lunatics, however, are generally cowards, and with proper management are easily awed.

The keeper should convince the maniac, that his power is absolute, and that all impropriety of conduct will be restrained by force. A prudent and vigorous coercion will generally restrain the fury, and sometimes restore rationality very speedily. He must then be treated with lenity and kindness, and with the manners due to his station in life, which will insure the respect of the pupil to his master, upon which every indulgence consistent with safety and propriety may be allowed. It is obvious, therefore, that a system of intimidation without cruelty, of restraint without indignity, of rigid order and discipline, combined with lenity and conciliation, is the only rational and successful method of combating the extravagances of lunatics.

Under slight attacks, it will be sufficient merely to confine the patient within doors, taking care at the same time to put it out of his power to escape, or do any injury either to himself or others. His mind is to

* See Observations on Madness by Mr. Haslam.

be soothed, and his attention diverted as much as possible, by getting him to engage in some exercise or amusement, that will employ both body and mind at the same time, and that will divert the latter from pursuing any train of thought. In melancholia, this plan will be doubly necessary, and we may likewise allow entertaining books, cheerful company, and amusing scenes.

In more violent states of mania, the patient should be confined alone in a dark and quiet room, so that he may not be affected by the stimuli of light and sound, such abstraction more readily disposing to sleep. To prevent him from committing any violence, his hands ought to be properly secured with manacles, and he may likewise be confined by one leg, or he may be strapped by the hands and legs in a large chair fastened to the floor. As an horizontal posture tends to increase the fulness of the vessels in the brain, this should be avoided in the daytime. The strait waistcoat is another mode of confinement well calculated to prevent maniacs from doing any injury either to themselves or others; but in the furious state, and particularly in warm weather, it is apt to irritate and increase that restlessness which patients of this description usually labour under. Where malevolence forms a prominent feature, and the person is very furious, close confinement in the manner just detailed, is doubly necessary. In slighter cases, where the patient is in a condition to be sensible of restraint, he may be punished for any improper behaviour by confining him to his room; by degrading him, and not allowing him to associate with the convalescents, and by withholding those indulgences he has been accustomed to enjoy: the infliction of corporal chastisement ought never to be resorted to.

Insane persons should be made to rise early, to take such exercise as their condition will admit of, and have their food served up to them at stated times. Independently of such regularity contributing to health, it also renders them more manageable. In all cases of madness it will be proper to remove the patient from those objects with which he was formerly acquainted, as these might call up ideas and the various associations; and on this account, a change of situation, and removal from his friends, will be advisable; for it is a fact well known to those who superintend lunatics, that patients are seldom or never recovered at home. It not unfrequently happens, indeed, that maniacs, who have been brought immediately from their families, and who were said to be in a violent and ferocious state at home, become suddenly calm and tractable when placed in a lunatic asylum. On the other hand it is equally a fact, that there are many patients, whose disorder speedily recurs after having been suffered to return to their families, although they have for a length of time conducted themselves, under confinement, in a very orderly manner.

It is true indeed, that various objections have been raised against sending maniacs to a place of confinement, both among the highest and lowest classes of society. A principal one is, the fear of severe and cruel treatment, and the hazard of rendering the disorder permanent; but these apprehensions appear groundless; for there must be some grievous defect in the mode of amending the disordered mind, if correct sentiments

and rational and orderly behaviour are not inculcated by the habit of self-denial and strong efforts of the will. Let the appeal be fairly made by visiting a maniac at his own house, or at a large establishment, appropriated for the reception of such persons: patients in St. Luke's are, in general, not only more orderly, but more rational and tractable than those in a private receptacle, where the continual fluctuations of temper and apprehension among friends, lead alternately to an improper indulgence or undue severity.

It has been asserted, that some maniacs have been cured by being compelled to constant, and even hard labour; and as a forced attention to the conduct of any bodily exercise is a certain mean of diverting the mind from pursuing any train of thought, it is probable that such exercise may be useful in many cases of mania. A long journey has also been recommended. But these are more suited to a state of convalescence than to actual paroxysms of the disease.

Monsieur Pinel, in his Treatise on Insanity, tells us, that at the principal hospitals in Spain, the maniacs capable of working, are distributed every morning into separate parties. An overlooker is appointed for each class, who apportions to them all, individually, their respective employments, directs their exertions, and watches over their conduct. The whole day is thus occupied in salutary and refreshing exercises, which are interrupted only by short intervals of rest and relaxation. The fatigues of the day prepare the labourers for sleep and repose during the night. Hence it happens, that those whose condition does not place them above the necessity of submission to toil and labour, are almost always cured; whilst the grandee, who would think himself degraded by exercises of this description is generally incurable.

The skilful physician will always endeavour to investigate the maniacal idea or hallucination, as it may not only acquaint him with the probable designs of the patient, from whence may be deduced the necessity of confinement, but also may sometimes lead to the most effectual plan of cure. A late writer* on mania, who has long kept an establishment for the reception of lunatics of both sexes, has recorded a number of striking examples where, by humouring the subject of the mental disease, the most happy effects ensued, and the patients were perfectly restored to reason and health. To assist the young practitioner in applying a judicious moral treatment under similar circumstances, I have transcribed one of the cases, which is as follows:

Case 2d. Mr. ——, aged 40, of a spare and melancholic temperament, remarkable for general and almost universal acquired knowledge, and always possessing singular equanimity, had injured his health by too close an attention to extensive mercantile concerns. At length he was observed to be very attentive to every feeling, of which he made minute descriptions to his family: this increasing, he became a prey to empiricism, read several ridiculous popular pamphlets, and was soon worked up to a belief that his body was the common receptacle of disease; pills, potions, powders, unctions, lotions, and mercurial girdles, were employ-

* See Practical Observations on Insanity, by J. M. Cox, M. D.

ed and dismissed in succession. The metallic tractors for a time amused him, till it was proved to the patient and to his friends who witnessed the experiments, that these expensive baubles possessed no more properties than a rusty nail. All the fears of the patient became at length concentred in one, from the contemplation of, and conversation on which, no arguments could divert him: he believed all his sufferings arose from repelled itch; a formal consultation of medical men was therefore determined on, who having previously agreed on the propriety of humouring the subject of the mental disease, were unanimously of opinion the conjecture of the patient was just. A medical plan was laid down; some rubefacient application to different parts of the body, occasioned crops of eruptions from time to time, which were washed with some simple preparation. This farce continued a few weeks, and the patient at length was perfectly restored to health and reason.

A number of cases tending to shew the great utility of investigating the maniacal idea or hallucination are likewise reported by Dr. Darwin in the 4th volume of his Zoonomia, page 66.

With regard to the diet of maniacs, it is only necessary to observe that it should be light, nourishing, and easy of digestion, the quantity being in proportion to the age and vigour of the patient, and the degree of bodily exercise which he may be in the habit of using. Although temperance is strictly to be enjoined, still wine may be allowed in moderation during a state of convalescence, and particularly in melancholia. The criterion of the proper quantity should be that which does not affect the temper of the patient, nor exasperate his aversions. Maniacs who are paralytic, require to be kept warm, and to be allowed a more nutritious diet, and cheering beverage, than insane patients of any other description. In the winter months they suffer extremely.

Lunatics sometimes refuse all food for many days, so as to endanger their lives. In private receptacles it is usual, Mr. Haslam says, to have recourse to the operation of what is called spouting, whereby the front teeth are commonly broken and destroyed. To prevent this, he recommends an instrument,* by which food may be conveyed into the stomach with great facility, and without any injurious consequences to the teeth.

Bleeding has been much employed in mania. In paroxysms of madness, which are preceded by a heightened complexion, wildness and prominence of the eyes, and exuberant loquacity, or where there is obvious plethora, or evident determination and congestion about the head, a free use of the lancet, no doubt, is often attended with a happy effect; but bleeding, practised as it frequently is, without rule or bounds, among maniacs, often exasperates the complaint, and reduces the patient to a state of extreme debility, occasioning periodical and curable mania to degenerate into idiotism. Where absolutely necessary, drawing blood from the jugular veins will be preferable to taking it from the arm, or we may draw it from the head, by applying six or eight cupping-glasses to the scalp, after having it shaved. From eight to sixteen ounces may be drawn off

* See his Observations on Madness.

in this way, and the operation be repeated as circumstances may require.

For the purpose of obviating the fulness and tension of the vessels of the brain, purging is generally adopted, and medicines of the drastic kind, such as hellebore, are often made use of; but more advantage will probably be derived from a frequent exhibition of the kali tartarisatum, and other saline cooling purgatives, which are the principal medicines to be depended upon in mania.

Indeed, gentle purgatives* are of the utmost importance in the treatment of insanity. In periodical mania, the paroxysms are usually preceded by obstinate costiveness; and a dose or two of some purgative medicine, at an early period, will frequently put a stop to the progress of the attack; which fact ought to have due weight. Moreover, it has frequently happened, that a speedy convalescence has ensued in mania after the coming on of a diarrhœa, and in a few instances it has proved a cure.

At the commencement of paroxysms, where there is high excitement, both purging and venesection will undoubtedly be proper; but in melancholia, where there is extreme depression of both strength and spirits, neither of these remedies should be employed. In such cases, cinchona and other tonics will be most advisable. All debilitating means ought to be avoided, as tending to aggravate the symptoms of the disease, and to increase the probability of supervening idiotism.

Emetics have been recommended by some physicians† in mania, but by the generality of them they have been disapproved of, as being likely to increase the determination to the head, and occasion apoplectic or paralytic attacks. We are told by Mr. Haslam, that from many years observation and administration of many thousand emetics to insane persons at Bethlem Hospital, he has not been enabled to place any confidence in this class of medicines, as a cure for insanity, admitting at the same time, that the lunatic, whose stomach was in a disordered state, has been equally benefited with a person in his senses, by the operation of a vomit. In my opinion, emetics ought not to be administered, except with the view of removing symptoms that may be concomitant with mania.

Cold bathing, by diminishing irritation, is a remedy by which maniacs have been relieved, and sometimes entirely cured, especially when applied in a certain manner. This consists in throwing the person into cold water by surprise, by detaining him in it for some length of time, and pouring water frequently on his head, while the whole of the body, except the head, is immersed; and thus managing the process, so as that, with the

† See Obfervations on Infanity, by J. M. Cox, M. D.

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* ℞. Infus. Sennæ ℥jfs.—℥ij.
Kali Tartarifat. ʒij.
Tinct. Jalapii ʒjfs.
Syrup. Spin. Cerv. ℥j. M.
fr. Hauftus Catharticus.

assistance of some fear, a refrigerant effect may be produced. That the external application of cold may be of service, we have full experience, from the benefits which have been received, in some maniacal cases, from the application of ice and snow to the naked head.

Mr. Haslam mentions, that he has known, in many instances, paralytic affections to have ensued in a few hours after cold bathing, especially where the patient has been in a furious state, and of a plethoric habit. In other cases, he has known vertigo, or a considerable degree of fever, to ensue after a cold immersion.

Warm bathing has been recommended by some physicians, and others again have disapproved of it. By the majority it seems to be thought hurtful to maniacs. It probably may be most useful to those of a rigid melancholic temperament.

The late Dr. Willis was of opinion * that warm bathing might be useful to lunatics, but that cold bathing could seldom be required.

Opium, when administered to madmen during a violent paroxysm, has hardly ever been found to procure sleep; but, on the contrary, has rendered those who have taken it much more furious; and where it has for a short time procured rest, the patient has, after its operation, awoke in a state of increased violence. Opium, to prove serviceable in maniacal cases, ought to be administered in very large doses, such as about two hundred drops of its tincture. It seems, however, at best to be but a doubtful remedy.

An extensive friction, with a liniment consisting of six or ten grains of opium well triturated with a small quantity of hog's lard, has been recommended for the purpose of inducing sleep in maniacs, where its internal administration might be prejudicial.

Where the patient appears much reduced from the want of sleep, but still we dare not give opium, it has been proposed to lay a pillow filled with hops beneath his head, in order to procure rest. The experiment appears to have succeeded in a late memorable instance, and to have induced great composure, as well as a refreshing sleep.

With regard to the medical properties of the hop, or lupulus communis, the experiments made on it, show that it is evidently narcotic, inducing sleep like opium; but it seems rather to dispose to laxity of the bowels than costiveness. In this disease, as well as in some painful cases, where an opiate is greatly wanted, but where it cannot be exhibited in any of the usual forms without producing untoward symptoms, a strong infusion of the hop, used both internally and externally, has frequently, it is said, been found to sooth pain; and finally, to procure a calm, tranquil sleep. The best preparation, however, of the hop, appears to be the alkoholic tincture, made by digesting four drachms of the lupulus communis in ten ounces of spirits of wine. The dose may be from forty drops to one hundred.

The sedative effects of the digitalis point it out, we have reason to presume, as an useful and powerful remedy, in cases where great excitement

* Report of the Select Committee appointed to inquire into the ſtate of Lunatics.

and increased tone prevail in the nervous and arterial systems. It has, therefore, been used in mania, and not unfrequently with success.* When the derangement is accompanied, and in some degree regulated, by an accelerated circulation, a use of foxglove will be highly proper. A few drops of the tincture, or half a grain of the powder, are to be given at first, and the dose to be gradually increased till the desired effect is produced. To make this permanent, it will however be necessary to keep the constitution for some length of time under the influence of the medicine.

A case of mania preceded by strong epileptic fits of frequent recurrence, and induced by a long and intemperate use of spirituous liquors, some time ago came under my care, wherein by adopting this plan, the mental affection, as well as the spasmodic, entirely ceased. On discontinuing a use of the digitalis, the patient commenced a course of calcined zinc joined with stomachics, which completed the cure.

Camphor is a medicine which has been much recommended by some physicians in mania, while by others it is said to be useless.

I understand that Dr. Willis gave the camphorated mixture at the same time with the extracts of cicuta, hyoscyamus, and other narcotic vegetables. Might not a combination of it with digitalis prove advantageous?

Blisters and other drains, such as issues, or a seton, have likewise been employed in this disease; and, when recent, may probably have a good effect. In cases of long standing, they have been found ineffectual.

Dr. Monro, in his Observations on Mania, mentions that a blister, when applied to the head itself, seldom proves useful; and the same circumstance has been noticed by other physicians. When we have recourse to blisters, it will be most advisable therefore to apply them to the neck, back, or legs. To keep up a sufficient discharge from them, I have found the unguentum sabinæ far preferable to the unguentum cantharidis mitius.

In the cure of insanity, quietness, and the abstraction of all stimuli, are in general to be enjoined; yet there appear to be exceptions, Dr. Cox very judiciously observes, both with regard to light and other stimuli; for in some cases total darkness aggravates all the symptoms, excites fear, dread and apprehension; though in others it may be had recourse to with an intention of producing these effects. It appears a curious circumstance, that the conversion of religious melancholy into furious madness, is an occurrence that sometimes happens, and when it does, is generally followed by recovery, which has suggested the propriety, in some cases that have resisted more common means, of producing a degree of excitement by means of stimuli; in fact, keeping the patient for some successive days in a state of intoxication. This plan, we are told, has often oc-

* See Observations on the Digitalis Purpurea, by Dr. Currie, vol. iv. article second, of Memoirs of the Medical Society of London.

casioned an alleviation of symptoms, and sometimes restored the sufferers to reason.

In cases of mental derangement, originating from the passions of grief, sorrow, or religious fear, and in which the system has sunk into apathy and dulness, the stimulus of galvanism, or of gentle electricity, affords some prospect of relief, more especially if the patient be not very far advanced in life. When we have recourse to the first of these remedies, it will be best to employ a pile consisting only of a few plates at first, that the brain may not be subjected to too violent an action. The same must be carefully guarded against when we resort to electricity.

Dr. Cox speaks highly of swinging as a remedy in mania, and he recites many cases where the happiest effects were derived from making use of it. We are told by him, that it may be employed in the common oscillatory way, or in a circular manner or whirl; the patient at the same time sitting erect, or lying horizontally. On persons in health, he observed these swings to produce only the common effects; but in proportion to the motion communicated, and sooner by the circular than by the oscillatory, and in the horizontal than in the perpendicular position. In some maniacal cases, independent of these more obvious effects, he noticed that swinging, often repeated, had the singular, property of rendering the system sensible to the action of agents, whose powers it before resisted. One of its most valuable properties was, its proving a mechanical anodyne. This effect I have myself observed.

After a very few circumvolutions, Dr. Cox has witnessed its soothing, lulling effects: the mind has become tranquillized, and the body quiescent; a degree of vertigo has often followed, and this has been succeeded by the most refreshing slumbers; an object the most desirable in every case of madness, and procured with the utmost difficulty in general. Maniacs, he has noticed, are not usually sensible to the action of the common oscillatory swing, although it affords an excellent mode of secure confinement, and of harmless punishment. By the protracted action of the circular swing, or whirl, he has sometimes seen the patient almost deprived of his locomotive powers; and although it required the combined strength and address of several experienced attendants to place him in it, still he has been taken out of it by a single person: the most profound sleep has followed, and this has been succeeded by convalescence, and a perfect recovery, without the assistance of any other mean. One of the most constant effects of swinging is a greater or less degree of vertigo, attended by pallor, nausea, and vomiting, and frequently by an evacuation of the contents of the bladder.

Where insanity attacks patients of a delicate habit with previous consumptive or pulmonic symptoms, swinging has in many instances proved highly beneficial.

When madness has taken place in consequence of great debility and weakness, as sometimes happens at the close of a nervous fever, all evacuations whatever ought to be avoided, a nutritive and

restorative diet should be allowed, and a regular course of the Peruvian bark and other bitters, together with chalybeates, be entered upon; the patient taking, at the same time, such daily exercise in the open air, either in a carriage or on horseback, as his strength will admit.

Where insanity occurs during the puerperal state, the child should be brought frequently to the mother, and applied to her breast, if she will suffer it, and this, whether she at first attends to it or not; as by a few trials it frequently excites the maternal affection, and removes the disease.

The mind is apt to be much affected, both after abortion and delivery, and in some instances the woman becomes either melancholic, or mad, the latter being more frequent. This mania is in general sudden in its attack, and is often preceded by great palpitation and some other nervous affections. The disease, although frequently tedious in such cases, is oftener got the better of than any other species of mania.

Upon a general principle, a blister ought to be applied in the neighbourhood of the head, and a free discharge be kept up from it. The bowels are to be carefully attended to, and no indurated fæces be allowed to remain in them. Through the day, the camphorated mixture may be given, and at night we may exhibit a full dose of the extract of hyoscyamus. The patient is at the same time to be kept in every respect as quiet as possible.

Of the NIGHT-MARE, or INCUBUS.

THIS is evidently a nervous affection, and comes on during sleep, with a sense of considerable weight and oppression at the chest, the person making many efforts to speak and move without effect, until, after many deep groans and much moaning, he at length awakes greatly frightened, and feels a considerable palpitation at the heart, with tremors, anxiety, and lassitude.

The causes which give rise to this complaint, are chiefly anxiety, grief, despondency, and intense thought; but it is sometimes occasioned by making use of food of a hard indigestible nature for supper. In most cases it may, however, be considered as arising from the impression of dreams, or a distemperature of thought, and therefore is not attended with any danger. A spasmodic constriction of the diaphragm and muscles of the chest is by many assigned as the proximate cause of incubus.

Those who lead an inactive sedentary life, and are of a lax fibre, are most predisposed to its attacks.

When indigestion, or any weakness of the stomach prevails, a course of tonics, as advised under the head of Dyspepsia, will be highly proper, to which may be added a daily use of some cordial volatile medicine. If there is no contra-indication to cold bathing, this may prove a good auxiliary.

Such as are subject to this affection, should be careful, by way of prevention, not to indulge in gloomy reflections; but, on the contrary, to keep their minds as cheerful and tranquil as possible; they should likewise avoid a sedentary life, and all such food as is apt to prove hard of digestion, but more particularly for supper.

CLASS III.

CACHEXIÆ, OR CACHECTIC DISEASES.

DEPRAVED state of the whole, or greater part of the body, without any primary febrile or nervous affection.

ORDER I.

MARCORES.

EMACIATION of the whole body is the character of this order.

Of ATROPHY, or ATROPHIA.

THIS disease is marked by a gradual wasting of the body, unaccompanied either by a difficulty of breathing, cough, or any evident fever at first, but usually attended with a loss of appetite and impaired digestion, depression of spirits, and general languor.

The causes which commonly give rise to it are, a poor diet, unwholesome air, excess in venery, scrofulous disposition, fluor albus, severe evacuations, continuing to give suck too long, a free use of spirituous liquors, mental uneasiness, and worms; but it frequently comes on without any evident cause.

Young persons of both sexes, who are of a delicate make, and at the same time grow very fast, are apt to be attacked with this complaint before they arrive at the age of puberty. It is particularly prevalent in large and populous cities, where children are deprived of ready access to exercise in pure air, or where they are confined in crowded schoolrooms. Children also who are employed in manufactories where their occupation and confinement are such as to weaken and enervate them, are very liable to be attacked with it.

Sluggishness, lassitude on the slightest exertion, depravity and loss of appetite, wasting of the muscular flesh, paleness of the countenance, with bloating, swelling and prominence of the belly, œdema of the

lower extremities, an irregular and generally costive state of the bowels, a change in the colour and odour of the fæces, and fetid breath, mark the beginning of the disease. When these symptoms have continued for a little time, they are followed by alternate paleness and flushing of the countenance, heat and dryness of the skin, a feeble and quick pulse, thirst, fretfulness, great debility, and disturbed sleep.

Atrophy, arise from whatever cause it may, is usually very difficult to cure, and not unfrequently terminates in dropsy.

In attempting, however, to effect this, we should endeavour to find out the cause from which it has originated, and to remove it, if possible. If occasioned by worms, these must be destroyed by the vermifuge medicines advised under that particular head; if by sensual excesses, or the continuing to give suck too long, these must wholly be discontinued; if from severe evacuations, these must be suppressed; if from an impoverished diet and unwholesome air, these must be quickly changed; if from a scrofulous disposition, deobstruents, purges, and tonics must be had recourse to in due turn; and if from a venereal taint, which is sometimes the case, we must then resort to a use of mercury, with the decoctum sarsæ and other auxiliaries, as recommended under the head of Syphilis, together with a milk diet.

In all cases of atrophy the patient should make use of food that is nutritive and easy of digestion, and it should be taken frequently, but in small quantities at a time. He should likewise breath a pure, dry, and wholesome air; taking such moderate exercise every day on horseback, as his strength will admit.

To assist the digestive powers, it will be proper to put him under a course of stomachic bitters, the bark and chalybeates. Proper evacuations by stool ought to be strictly attended to. Mild laxatives repeated at proper intervals will therefore be necessary. They will preserve the bowels in proper action, carry off fæces which had begun to be offensive and hurtful, and prevent accumulation. Gentle vomitings, with the vitriol. cupri, as mentioned under the head of Phthisis Pulmonalis, might possibly, by their stimulus, prove of infinite service. The myrrh mixture, recommended in the cure of the same disease, would be likely to produce a good effect.

In this complaint, cold bathing will be proper, but the patient should begin with a tepid bath, reducing it gradually to a cool, and at length to a cold temperature.

When there is a disposition to œdematous swellings of the legs and feet, we should combine diuretics with whatever tonics we administer, as advised in Anasarca.

In children of a scrofulous habit, atrophy is often accompanied with an enlargement of the mesenteric glands; and then indigestion, costiveness, or purging, irregular appetite, flushed cheeks, or a total loss of colour, impaired strength and spirits, remitting fever, and a hard and tumid belly, with emaciated limbs, prevail.

In a general way, the principal indications in such cases are to remove the obstructions in the lymphatic system, and effect a resolution of the indurated glands of the mesentery; to carry off the viscid matter;

and lastly to strengthen the system and establish a good digestion, as well by means of proper diet as by medicine.

Among the first, and as general deobstruents, are mercurial and antimonial remedies, neutral salts, soap, steel, and cicuta, to which perhaps may be added with propriety, frictions to the abdomen, and the employment of a tepid salt-water bath. Calomel is the best mercurial we can employ, and may be joined with some purgative medicine, such as rhubarb: this combination may be continued in small doses daily, or every other day, till there shall be some favourable change in the feel and size of the belly. When we do not like to have recourse to mercury, we may administer rhubarb, joined with tartarised kali or polychrest salt, as a purge. Occasional gentle emetics may be good auxiliaries.

The emaciated state to which the patient is generally reduced, even although we should be fortunate enough to remove the obstruction, will require the aid of tonic remedies. To strengthen the stomach and alimentary canal, and promote a good digestion, the only means by which a nutritious chyle can be obtained, and the body kept in a healthy state, we should have recourse to bitter infusions* joined with aromatics, cinchona, and steel.† To these may be joined daily frictions of the belly, limbs, and spine. Where the obstructions are removed, the cold bath will be a proper remedy.

Where atrophy arises as a consequence of suckling, the curative indications are to restore the wasted strength, to relieve the affection of the lungs, and to quiet or remove the fever. The first point then is, for the woman to avoid the exciting cause, and therefore the child must be weaned immediately: she must live on milk, broths, jellies, sago, blancmange, salep, Indian arrow-root, and tapioca, with eggs, and a moderate quantity of animal food for dinner. Wine in moderation will likewise be proper. To add to the effects of a restorative diet, a course of the cinchona or other bitters, with the sulphuric acid, myrrh, and chalybeates, as advised for dyspepsia, may be entered upon.

If the affection of the lungs appears to be of an inflammatory nature, and marked by hardness of the pulse, oppressed breathing, or a fixed pain in some part of the thorax, bleeding to the amount of three

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* ℞. Infus. Gentian. C. ℥ijfs.
Tinct. Cardam. ℥fs.
Kali Præparat. ℥fs. M.
Capiat Cochl. j. Infantis bis terve in die.

Vel

℞. Infus. Cinchonæ ℥ijfs.
Tinct. Columb. ʒiij.
Kali Præparat. ℈j. M.
Cochl. j. bis die sumendum.

Vel

℞ Rad. Columb. Contus. ʒiij.
Aq. Bullientis ℥iv. Post horas tres Cola.
et adde Tinct. Cinnam. C. ℥fs.
Sal. Sodæ ℥fs. M.

† ℞. Rubigin. Ferri gr. ij. ad v.
Pulv. Columb. gr. viij. M.
ft. Pulvis mane et vespere capiendus.

Vel

℞. Pulv. Cinchon. gr. x. ad ℈j.
Ferri Vitriolat. gr. j. ad iij.
ft. Pulv. pro dos. bis in die repetendus.

or four ounces, may be necessary, which ought to be drawn from as near the pained part as possible by means of leeches; but if none of these symptoms are present, we should be content with applying a succession of blisters about the thorax. Where there is any inflammatory action, the diet must be confined to vegetables and milk, omitting the cinchona and other medicines, and substituting laxatives, and the saline mixture with nitre, combined with small nauseating doses of tartarised antimony.

The fever is to be removed by shortening the paroxysms when they come on, and during the intervals by preventing their recurrences by the means pointed out under the heads of Intermittent and Remittent Fevers.*

Of PULMONARY CONSUMPTION, or PHTHISIS.

PULMONARY consumption consists in an expectoration of purulent matter from the lungs, accompanied with general emaciation, debility, hectic fever, and a cough, which usually proves most troublesome towards morning.

The causes which predispose to this disease are very numerous; the following are, however, the most general: hereditary disposition; particular formation of the body, obvious by a long neck, prominent shoulders, and narrow chest; scrofulous diathesis, indicated by a fine clear skin, fair hair, delicate rosy complexion, large veins, thick upper lip, a weak voice, and great sensibility: certain diseases, such as catarrh, pneumonic inflammation, hæmoptoe, syphilis, scrofula, small-pox, and measles; particular employments exposing artificers to dust, such as needle-pointers,† stone-cutters, millers, &c, or to the fumes of metals or minerals under a confined and unwholesome air; violent passions, exertions, or affections of the mind, as grief, disappointment, anxiety, or close application to study, without using proper exercise; playing much on wind instruments; frequent and excessive debaucheries, late watching, and drinking freely of strong liquors; great evacuations, as diarrhœa, diabetes, excessive venery, fluor albus, immoderate discharge of the menstrual flux, and the continuing to suckle too long under a debilitated state; and, lastly, the application of cold, either by too quick a change of apparel, keeping on wet clothes, lying in damp beds, or exposing the body too suddenly to cool air, when heated by exercise; in short, by any thing that gives a considerable check to the perspiration.

In enumerating the causes of phthisis a late writer mentions‡ that moist air is a very frequent one: he supposes it to operate by occasion-

* The Atrophia Ablactatorum belongs to the order Mancores, but is inserted among the infantile diseases.

† In the fifth volume of Memoirs of the medical Society we are informed by Dr. Johnson, that persons employed in the pointing of needles, by dry-grinding them, are quickly affected by pulmonary complaints, such as cough, and purulent or bloody expectoration; and that they scarcely ever attain the age of forty years.

‡ See Dr. Wilson's Treatise on Febrile Diseases, vol. iv.

ing general relaxation and debility, and observes that the frequency of the disease in Holland has been attributed to this cause. It has not, however, been satisfactorily proved that phthisis is really frequent among the Dutch. The reverse indeed has been stated; for Dr. Beddoes, in his Essay on Pulmonary Consumption, quotes Dr. Cogan, a physician who practised many years in Holland, as remarking on the infrequency of coughs and colds in that country, in comparison with England; and consumption has been said to be much more rare in the fenny parts of Lincolnshire than in the high lands in the same county.

The more immediate or occasional causes of phthisis are hæmoptysis, pneumonic inflammation proceeding on to suppuration, catarrh, measles, asthma, and tubercles; the last of which is by far the most general.

Various causes have indeed been assigned for the increasing prevalence at the present time of this and other distressing diseases; and among others, the disuse of wood fires, and the general adoption of mineral coal for fuel, has of itself been thought sufficient by some persons to account for it. But the great and sudden changes of temperature to which our climate is subject, ought properly to be considered as the real cause of the frequency and prevalence of such diseases in this country; and there is great reason to suspect that the warmth and closeness of our apartments, together with the present scanty, light, and flimsy attire of our modish females, very much increase the liability to these complaints. In an economical point of view, as saving an expenditure of fuel, the ingenious contrivances of Count Rumford and others, undoubtedly are very efficacious for the purpose; but in the winter, when we leave such apartments to go into the open air, the sudden change of temperature, which we experience, often amounts to 25 or 30 degrees; the entrances to the lungs and glottis consequently fall into torpor, from the stream of cold air which is constantly passing between them for the purpose of respiration; and when we re-enter our apartments, the blood rushes with violence into these vessels, previously rendered torpid by the cold, and, like the pain our hands experience on coming near a fire, after being exposed to cold, we feel a sensation of heat about the glands of the throat: this local inflammation spreads, and we experience all the usual symptoms attendant on a recent catarrh.

In noticing the causes of the vast prevalence of phthisis pulmonalis, I think I may put down the increase of scrofula among us, and we therefore meet with more cases of tubercular consumption than of any other kind. The predisposition to scrofula is inherited by children from their parents, and at some period or other of their life the disease shews itself either in inflammation of some gland that suppurates and breaks externally; or in tubercles in the lungs that proceed to suppuration and ulceration, and terminate in consumption.

That consumptive mortality has very considerably increased in Great Britain within the last century, cannot be denied; and, according to the

calculations of a modern writer,* the annual victims to consumption in this island are not less than fifty-five thousand persons out of a population of eleven millions.

All over the Levant, not only the natives but also the physicians entertain an opinion that phthisis is a disease of a contagious nature; and in the Venetian states there is a law, I understand, which directs the clothes and even furniture of those who have died of consumptions to be burnt. It does not seem probable, however, that phthisis pulmonalis is infectious, at least it is not regarded so among us; but it often occurs in a family from an exposure to the same occasional causes, or from a similarity of constitution, and hereditary predisposition. The only way in which I conceive the disease can be conveyed from one person to another, if at all possible, is by sleeping constantly in the same bed with one who labours under it, in its ulcerative stage, accompanied with fetid expectoration and cadaverous-smelling night-sweats, and so inhaling his breath. Two or three seemingly well-marked cases of this nature have fallen under my own observation. Respecting the question of contagion of this disease, the late Dr. Heberden observes† that he has not seen proof enough to say, that the breath of a consumptive person is infectious; and yet he has seen too much appearance of it to be sure that it is not; for he has observed several die of consumptions, in whom infection seemed to be the most probable origin of their illness, from their having been the constant companions, or bedfellows, of consumptive persons. Viewing the subject in this light, it would therefore be advisable to avoid being too closely inmated with patients in the last stage of pulmonary consumption.

The proximate cause of phthisis is supposed to be an ulcer in the lungs.

The incipient symptoms of phthisis usually vary with the cause of the disease; but when it arises from tubercles, it is mostly thus marked: It begins with a short dry cough, that at length becomes habitual, but from which nothing is spit up for some time, except a frothy mucus that seems to proceed from the fauces. The breathing is at the same time somewhat impeded, and upon the least bodily motion is much hurried; a sense of straitness, with oppression at the chest, is experienced; the body becomes gradually leaner, and great languor, with indolence, dejection of spirits, and loss of appetite, prevail.

In this state the patient frequently continues a considerable length of time, during which, he is, however, more readily affected than usual by slight colds; and upon one or other of these occasions the cough becomes more troublesome and severe, particularly by night, and is at length attended with an expectoration, which towards morning is more free and copious. By degrees, the matter which is expectorated, becomes more viscid and opaque, and now assumes a greenish colour and purulent appearance, being on many occasions streaked with blood. In

* See Remarks on the progressive Increase of Consumption, &c. by W. Woolcombe, M.D.

† See his Commentaries on the History and Cure of Diseases.

some cases a more severe degree of hæmoptysis attends, and the patient spits up a considerable quantity of florid frothy blood.

The breathing at length becomes more difficult, and the emaciation and weakness go on increasing. With these, the person begins to be sensible of a pain in some part of the thorax, which however, is usually felt at first under the sternum, particularly on coughing.

At a more advanced period of the disease a pain is sometimes perceived on one side, and at times prevails in so high a degree, as to prevent the person from lying easily on that side; but it more frequently happens, that, it is felt only upon making a full inspiration, or coughing. Even where no pain is felt, it often happens, that those who labour under phthisis cannot lie easily on one or other of their sides, without a fit of coughing being excited, or the difficulty of breathing being much increased.

At the first commencement of the disease the pulse is often natural, or perhaps is soft, small, and a little quicker than usual; but when the symptoms which have been enumerated have subsisted for any length of time, it then becomes full, hard, and frequent. At the same time the face flushes, particularly after eating; the palms of the hands and soles of the feet are affected with burning heat; the respiration is difficult and laborious, evening exacerbations become obvious, and by degrees the fever assumes the hectic form.

This species of fever is evidently of the remittent kind, and has exacerbations twice every day. The first occurs usually about noon, and a slight remission ensues about five in the afternoon. This last is, however, soon succeeded by another exacerbation, which increases gradually until after midnight; but about two o'clock in the morning a remission takes place, and this becomes more apparent as the morning advances. During the exacerbations the patient is very sensible to any coolness of the air, and often complains of a sense of cold, when his skin is, at the same time, preternaturally warm. Of these exacerbations, that of the evening is by far the most considerable.

From the first appearance of the hectic symptoms, the urine is high-coloured, and deposits a copious branny red sediment. The appetite, however, is not greatly impaired, the tongue appears clean, the mouth is usually moist, and the thirst is inconsiderable. As the disease advances, the fauces put on rather an inflamed appearance, and are beset with aphthæ, and the red vessels of the tunica adnata become of a pearly white. During the exacerbations a florid circumscribed redness appears on each cheek; but at other times the face is pale, and the countenance somewhat dejected.

At the commencement of hectic fever the belly is usually costive; but in the more advanced stages of it, a diarrhœa often comes on, and this continues to recur frequently during the remainder of the disease: colliquative sweats likewise break out, and these alternate with each other, and induce vast debility.

In the last stage of the disease the emaciation is so great, that the patient has the appearance of a walking skeleton; his countenance is altered, his cheek-bones are prominent, his eyes look hollow and lan-

guid, his hair falls off, his nails are of a livid colour, and much incurvated, and his feet are affected with œdematous swellings. To the end of the disease the senses remain entire, and the mind is confident and full of hope. It is indeed a happy circumstance attendant on phthisis, that those who labour under it are seldom apprehensive or aware of any danger; and it is no uncommon occurrence to meet with persons labouring under its most advanced stage, flattering themselves with a speedy recovery, and forming distant projects under that vain hope.

Shortly before death the extremities become cold. In some cases a delirium precedes that event, and continues until life is extinguished.

As an expectoration of mucus from the lungs may possibly be mistaken for purulent matter, and may thereby give us reason to suspect that the patient labours under a confirmed phthisis, when he really does not, it may not be amiss to point out a sure criterion, by which we shall always be able to distinguish mucus from pus. The physical world are indebted to the late Mr. Charles Darwin for the discovery, who has directed the experiment to be made in the following manner:

Let the expectorated matter be dissolved in sulphuric acid and in caustic lixivium, and add pure water to both solutions. If there is a fair precipitation in each, it is a certain sign of the presence of pus; but if there is not a precipitation in either, it is certainly mucus.

Muriated quicksilver he found to coagulate mucus, but not pus.

Mr. Everard Home, in his Dissertation on the Properties of Pus, informs us also of a decisive mode of distinguishing accurately between pus and animal mucus.

Pus, he observes, is of the consistence of cream, its colour is whitish, and it has a mawkish taste. When cold, it is inodorous; when warm, it has a peculiar smell. Examined by the microscope, it consists of semi-opaque globules, and a transparent colourless fluid, which is coagulated by sal ammoniac. Pus may be evaporated to dryness, without coagulating. Its specific gravity is greater than that of water. It does not putrefy readily; nor is it easily diffused in cold water, but in warm water it is speedily diffused, and remains so after it cools. Animal mucus and all chemical combinations of animal substances, appear in the microscope to be made up of flakes. This property was first noticed by the late Mr. John Hunter.

Pulmonary consumption is in every case to be considered as attended with much danger; but it is more so, when it proceeds from tubercles, than when it arises in consequence either of hæmoptysis, or pneumonic suppuration. In the last instance the risk will be greater where the abscess breaks inwardly, and gives rise to empyema, than when its contents are discharged by the mouth. Even cases of this nature have, nevertheless, been known to terminate in immediate death. The impending danger is generally to be judged of, however, by the violence of the hectic symptoms; but more particularly by the fetor of the expectoration, the degree of emaciation and debility, the colliquative sweats, and the diarrhœa. The disease has, in many cases, been found to be

considerably retarded in its progress by pregnancy; and in a few, has been alleviated by an attack of mania.

The morbid appearance most frequently to be met with on the dissections of those who die of phthisis, is the existence of tubercles in the cellular substance of the lungs. These are small tumours, which have the appearance of indurated glands, are of different sizes, and are often found in clusters. Their firmness is usually in proportion to their size; and when laid open in this state, they are of a white colour, and of a consistence nearly approaching to cartilage. Although indolent at first, they at length become inflamed, and are at last changed into little abscesses, or vomicæ, which breaking, and pouring their contents into the bronchiæ, give rise to purulent expectoration, and thus lay the foundation of phthisis.

Such tubercles, or vomicæ, are most usually situated at the upper and back part of the lungs; but, in some instances, they occupy the outer part, and then adhesions to the pleura are often formed.

When the disease is partial, only about a fourth of the upper and posterior part of the lungs is usually found diseased; but in some cases, life has been protracted till not one twentieth part of them appeared, on dissection, fit for performing their function. A singular observation, confirmed by the morbid collections of anatomists, is, that the left lobe is much oftener affected than the right.

Experience having taught, that it is only in the early stage of phthisis that remedies are likely to be employed with success, we ought by all means to pay the greatest attention to the first appearance of the symptoms.

Where a spitting of blood occurs in a person of a phthisical habit, or in one born of phthisical parents, we are to endeavour by every possible means to prevent ulceration from taking place, which is to be done by employing the means for moderating the hemorrhage, and likewise preventing any future return of it, as advised under the head of Hæmoptysis; and these means and precautions ought to be continued, and extended beyond the period at which phthisis proves chiefly fatal, which is usually between the twentieth and thirtieth year of his age.

The phthisis which ensues from pulmonic inflammation proceeding on to suppuration, is only to be prevented by pursuing the means that will procure a resolution of such inflammation. Of these, particular mention has been made in the cure of peripneumony, to which head I beg leave to refer the reader.

When a person of a phthisical habit, or born of parents who have had the same disposition, is about the age of twenty, or sooner, attacked in the spring of the year, or summer, with the symptoms which have been enumerated in the first stage of the disease, and this even in the very slightest degree, we have just grounds to apprehend that tubercles have either formed, or are about to form, in the lungs: in such a case we are to exert our utmost endeavours to prevent their formation, and to procure their resolution.

To effect these purposes, we must have recourse to a strict pursuance of the antiphlogistic plan, such as bleeding, keeping the body open with gentle laxatives, and the use of a spare regimen.

The propriety of the first of these remedies, viz. blood-letting, has, however, of late years been much disputed, and it has indeed fallen a good deal into discredit. That blood-letting, and the rest of the antiphlogistic plan, may formerly have been carried much too far in many cases, I readily admit; but certain it is, that for some years past, the opposite system has been carried to an equally hurtful excess.

In the inflammatory, and first stage of phthisis, where the patient complains of a difficulty of breathing, with pain in his breast or side, has hot restless nights, with a hard contracted pulse, and a cough, there can be no doubt but that bleeding may be of infinite service, provided the quantity taken away bears a just proportion to his strength and habit, and to the severity of the symptoms; but having recourse to it under the stage of ulceration, where the expectoration has become purulent, and where great debility prevails with night sweats, and repeating the operation frequently, even in small quantities at a time, as was formerly practised, must evidently prove highly injurious. At an early period, we have in view to procure a resolution of the inflamed tubercles; but in confirmed phthisis this hope no longer exists.

During the first and inflammatory stage of the disease it will be advisable, in compliance with the antiphlogistic plan, to employ gentle laxatives, should the bowels be inclinable to costiveness.

With the same view, it will be necessary to pay a proper attention to regimen. The diet should consist of such things as are nutritive and easy of digestion; as, preparations of the different farinacea with milk, most kinds of vegetables and fruits, poached eggs, light puddings, custards, jellies, and animal broths. The different kinds of shell-fish (but more particularly oysters, lobsters, crabs, prawns, and cray-fish) may also be proper. Where the symptoms are but trifling, and the patient cannot well refrain from animal food, he may then be allowed such as is of the lightest nature, and most easily digested. All fermented liquors, but more particularly spirituous ones, are to be avoided.

Milk of itself is a valuable remedy in phthisis. That of the ass is usually preferred to any other; but it cannot always be obtained; besides, it is generally taken in a very small quantity; whereas, to produce any effect, it ought to make a considerable part of the patient's diet. Instead of taking half an English pint night and morning only, as is usually practised by phthisical patients, they ought to take it at least four times a day, eating a little bread with it, so as to make it a kind of meal.

If the milk should happen to purge, it may be mixed with a little of the powder of prepared crabs claws, or with a small quantity of the conserva rosæ rubræ.

The best effects have been known to proceed from a long continued use of women's milk, which is indeed the best of all others for consumptive persons; but as it is not to be obtained in a sufficient quan-

tity, we are generally obliged to substitute either asses milk, or that of cows.

The milk of cows, although not so easily digested as that of asses or mares, may be rendered much lighter by allowing it to stand for some time, and then taking off the cream.

In cases of incipient phthisis, a free use of butter-milk has frequently been attended with much advantage. In order to make it sit easy on the stomach, it should at first be taken sparingly, and the quantity gradually be increased.

To assist in preventing an inflammation of the tubercles in the lungs, it will be necessary that the patient avoids any particular irritation of the part affected, which may arise from the violent exercise of respiration, as in singing, playing on wind instruments, or making long and loud declamations: he is likewise to avoid going into crowded rooms, the air of which, from being inhaled by many different people, becomes at length very unfit for respiration, particularly in those whose lungs are already in a weak and irritable state; he is to refrain from placing his body in such a position, either in reading, writing, or following his ordinary occupation in life, as that the capacity of the thorax shall be the least straitened in consequence of pressure against it: he is to shun all kinds of bodily exercise which require much exertion, and, in particular, he is carefully to guard against any exposure to cold, which never fails to determine a greater quantity of blood to the lungs, and other internal parts, than what is natural.

With the view of guarding against any diminution of cutaneous perspiration, in consequence of the application to cold, he should wear a flannel waistcoat next to his skin, together with sliders of the same, and stockings of cotton or worsted. Such a dress may be found a little irksome at first; but time soon reconciles it, and in the end renders it truly desirable and comfortable.

Where the patient cannot bear flannel next the skin, he may make trial of calico, which will keep up a more equable temperature on the surface of the body than linen, and guard against the action of external cold. He is by all means to avoid exposing himself to the piercing north-east winds of this country.

If the patient's circumstances will admit of his removing on the approach of winter to some temperate climate, such as Lisbon, the island of Madeira, Italy, or the south of France, he may resort thither; changing his situation on the approach of summer to more northern parts, or again returning to his own country.

A celebrated female writer* informs us, she is convinced by experience that the lives of many consumptive patients might be saved were they sent by sea to Leghorn, advised to winter at Pisa, cautioned against travelling much by land, and, above all things, interdicted from crossing the Apennine and Alps, which people very frequently do, in order to spend the summer months in Switzerland, one of the most unequal climates in Europe. She thinks, that, in pulmonary complaints, Pisa is

* See Starke's Letters, vol. ii. p. 261.

entitled to a decided preference over Nice, Massa, Florence, Rome, or Naples, or indeed to any other place in Europe, from the beginning of October, till the end of April. She was advised to travel over land to Italy, and therefore she passed over to France. Nice was recommended to her as the best winter climate, and she therefore spent many months in that city: but experience soon convinced her that she might have adopted a more eligible plan; for long journies over-land on the continent are to consumptive persons dangerous experiments, owing to the accommodations being so very indifferent that it is scarcely possible for an invalid to sleep at an inn out of a great town without suffering. To consumptive persons and invalids in general, she therefore recommends the going to Italy by sea in a vessel bound for Leghorn, and so wintering at Pisa.

When the patient's circumstances or business will not admit of his removing to a more temperate climate, he must endeavour to pass his winter in some place which is dry and well sheltered from cold bleak winds, where the air is free and pure, and the soil of a gravelly nature. The mild and sheltered vales of Devonshire and a part of Cornwall, offer desirable situations of this nature. In the summer he may remove to one which is more elevated. Should his residence be in a large city, or in any other place where the air is confined, he ought by all means to quit it, for such a situation in the country as has just been described.

With the enjoyment of a free and pure air, he should take daily moderate exercise either in a carriage or on horseback, but more particularly the latter. By taking it in progressive journies through different parts of the country in fair and settled weather, the efficacy of the remedy, great as it may be at other times, would be much increased; for in such a tour, the mind would find an ample store of amusement, and be diverted from any train of unpleasant thought. The pursuit of some object at the same time, might probably add to the effect.

Under the principle of amusing the mind, and at the same time of having a desirable end to be obtained, many phthisical patients are yearly sent to the Hot-wells at Bristol. The waters of these wells have long been extolled for their supposed good effect in consumptive cases; but in my humble opinion they are by no means deserving of the credit ascribed to them, as, during a long residence at and near these wells, I cannot charge my memory with a single instance, where any person labouring under a confirmed phthisis, experienced much relief from their use.

That many persons who have been of a phthisical habit have derived benefit from resorting to the Bristol Hot-wells, I am ready to admit; but this should not be attributed wholly to the waters. The horse exercise, which is taken daily by such patients, on a fine airy down, where most beautiful views and rich landscapes are presented to the eye on every side; the salubrity of the air; the healthfulness of the situation, and the frequent attendance on the different amusements which are furnished at these wells, prove beyond all doubt most powerful auxiliaries. Places of public resort are food to the mind of convalescents, and serve to keep

it in the same active state that exercise does the body, preventing thereby that indulgence in gloomy reflection, to which the want of cheerful scenes and agreeable company is apt to give rise in those who have an indifferent state of health.

The opinion which I have here offered on the efficacy of the Bristol Hot-wells waters, seems however by no means to accord with that entertained of them by a gentleman, who some time ago published a dissertation on their chemical and medical properties.* On the subject of pulmonary consumption, he observes, that the utility of a journey to Bristol, undertaken while a cure is yet practicable, is demonstrated by hundreds of examples annually, where the disease is prevented in many, and suspended or mitigated in others.

Respecting the composition of the Bristol water, it appears, from the author's experiments, to consist of the following principles: a wine gallon of 231 inches is impregnated with

Muriated magnesia	$7\frac{1}{4}$ grains
Muriated soda	4
Vitriolated soda	$11\frac{1}{4}$
Vitriolated lime	$11\frac{1}{4}$
Carbonated lime	$13\frac{1}{2}$
Making together of solid matter	$47\frac{1}{4}$ grains
Carbonic acid gas	30 cubic inches
Respirable air	3
Making together of gaseous fluids	33 cubic inches.

On the supposed virtues of this water in phthisis, there has indeed prevailed much diversity of opinion, and many have denied that it possesses any peculiar power superior to simple water. Dr. Saunders† thinks, that although it is by no means a cure for consumption, still it will be found to alleviate some of the most harassing symptoms in this formidable disease. He observes, it is particularly efficacious in moderating the thirst, the dry burning heat of the hands and feet, the partial night-sweats, and the symptoms that are peculiarly hectical; and thus in the early stages of phthisis, it may probably contribute to a re-establishment of health; and even in the latter periods it may considerably relieve, when the prospect of a cure has long been doubtful, if not hopeless.

Short voyages on sea have been much recommended to consumptive persons, under the idea that sailing is of all modes of exercise or conveyance the smoothest and most constant. The good effects produced by sea voyages seem to depend, however, chiefly on the purity of the air, assisted

* See Dr. Carrick's Dissertation on the chemical and medical Properties of the Bristol Hot-well Water.

† See his Treatise on Mineral Waters, p. 125.

somewhat probably by the occasional vomiting, which persons unaccustomed to be on board of a ship usually experience.

Swinging is another species of exercise much recommended to phthisical patients. The use of what are called dumb bells might perhaps likewise prove serviceable.

To remove inflammation from the lungs, and prevent the tubercles from proceeding to suppuration, the application of a blister will be highly proper; and that it may be rendered perpetual, it should be shifted from the chest to the side, and from the side to the chest, whenever the discharge ceases to be plentiful. Issues or a seton are frequently inserted in the side, or between the scapulæ; and in cases of incipient phthisis, sometimes produce a good effect. Topical bleedings by means of leeches and cupping, might likewise be resorted to with advantage in this stage of the disease. Both blisters and topical bleedings will afford considerable relief where there is a fixed pain in the breast or sides, which is increased upon coughing.

On the recommendation of Dr. Beddoes, factitious airs have of late years been much employed in the early stage of phthisis, and, as auxiliaries, they have undoubtedly proved very serviceable; but from their virtues having been much overrated, and an almost sole dependance placed upon them in many cases, they have fallen somewhat into disrepute, and other remedies have been substituted in a very rapid succession. Oxygen reduced by an addition of hydrogen, and other aërial fluids, with carbonic acid gas, are those which have been chiefly used. With these the air of a room may easily be impregnated, by means of the apparatus invented by Mr. Watt of Birmingham.

Where there is any difficulty in procuring the proper apparatus and materials, so as to prevent the possibility of adopting the most expeditious, or, upon the whole, the most advantageous methods of procuring the aërial fluids, the practitioner will do well in consulting Tiberius Cavallo's Essay* on the medical Properties of factitious Airs, in which a substitute is recommended.

The following are his observations on the gases, and they are highly judicious:

"In the use of oxygen," he says, "we have a singular stimulus, which admits of its being rendered more or less active by dilution with various proportions of common air. In its pure, or nearly pure state, it is a powerful exciter of suspended animation, and when diluted with a considerable quantity of common air, it is a gentle stimulus, which, by invigorating the various parts of the animal body, by communicating firmness to the solids and energy to the fluids, does frequently obliterate the causes of morbid habits.

"The use of azotic gas, and of the various species of hydrogen gas, produces a diminution of the irritability of the animal fibre to any degree, and hence it becomes useful in a variety of those disorders which depend on an increased irritability, such as inflammations, coughs, spasms, &c. In

* See chapter the first.

the use of carbonic acid gas we have a powerful antiseptic, and in certain cases, a solvent of considerable efficacy.

" The use of pure oxygen air is confined to the purpose of exciting the dormant powers of suspended animation, and it is therefore to be administered to children born apparently dead or overlaid; to persons suffocated by drowning, by steam of charcoal, by foul air, &c. whenever the circumstances of the case may indicate a possibility of recovery.

" Those cases excepted, the respiration of pure, or nearly pure, oxygen air, is almost always attended with unfavourable symptoms, such as a preternatural heat, especially about the region of the lungs; a quickened and feverish pulsation, inflammation, &c. And these symptoms come on after a longer or shorter use of the oxygen air, according to the particular constitution of the experimenter, and the purity of the gas.

" But when the oxygen is diluted with much common air, viz. in the proportion of one to eight, and even as far as one to twenty, it then is a safe and useful remedy, whose principal action consists in giving tone, elasticity, and consistence to the fluid as well as to the solid parts of the body, and of course it promotes all the natural consequences of those effects, viz. it quickens languid circulation, it strengthens the organs of digestion, promotes secretions, invigorates debilitated habits, and assists nature in throwing off bad humours, and other lurking causes of diseases."

Our author concludes with the following observations:

" After a careful consideration of the preceding general and comprehensive prospect of the medicinal use and efficacy of the aërial fluids, we may easily regulate the measure of our hopes by the standard of reason and experience. The idea of finding in them a remedy capable of curing consumptions in their various stages must be laid aside, and the hope of healing all sorts of internal ulcers will naturally vanish. A use of reduced atmosphere does undoubtedly diminish the irritability of the fibre, and a diminution of irritability favours the healing of certain ulcers, but by no means of them all; nay, in some cases it will even produce the contrary effect. The use of oxygen air has been found advantageous in many of those disorders that are called nervous, and it has undoubtedly strengthened and invigorated debilitated or emaciated habits; but it would be absurd to expect that it should prove beneficial in all cases of emaciation and debility, since those visible effects are often produced by causes that may be rather fomented than checked by the use of oxygen air."

The only remark I have to add to these judicious observations, now fully established by the repeated trials of others, is, that the confidence placed by certain practitioners in the efficacy of artificial atmospheres, seems entirely to be done away.

The vapour of æthereal spirit of vitriol dropped into warm water, has, in some cases of phthisis pulmonalis, been inhaled with considerable advantage to the patient.

Earth-bathing, and stabling with cows, have been recommended by Dr. Beddoes in cases of incipient phthisis. Having had no experience of these remedies, I must beg leave to pass them over, it being sufficient that I have mentioned them. The former of these, we are given to understand by Van Swieten, in his Commentaries on Boerhaave, is much adopted in Granada, Andalusia, and other parts of Spain, in the cure of phthisis pulmonalis, and was first used in this country by the late well-known empiric Dr. Graham.

One of the latest remedies which has been introduced into practice for the cure of phthisis, is the digitalis purpurea. To speak properly, it is however rather the revival of an old remedy long laid aside, than a new one. Concerning the virtues and mode of operation of this medicine, a variety of opinions have been entertained; some attributing to it the power of diminishing secretion, and of exciting the action of the absorbents; and others, again, looking upon it as only useful from the power it possesses of lessening the action of the heart and arteries. Foxglove has indeed been generally considered as a direct sedative; and by this power producing a rapid diminution in the frequency of arterial pulsation. A modern writer* contends, however, that it is a powerful stimulant; that it increases the strength and frequency of the pulse, and if continued sufficiently long, produces flushed face, headach, hot skin, restlessness, and other symptoms of febrile action. These are effects, which, indeed, we have never before heard attributed to this drug, being diametrically opposite to what they are by all others believed to be.

Its chief advocates† are undoubtedly men of considerable eminence in their profession, and their report is certainly highly in its favour. They seem, however, to be too confident of having discovered a specific (if I may be allowed the term) for this dreadful disease; and until it is determined that the digitalis alone, and not conjointly with other medicines, has uniformly cured pulmonary consumption, and that it produces effects on the human system different from all others of the same class, we are by no means authorized to consider it in so very favourable a light.

Dr. Beddoes, in his Essay on Consumptions, after having informed us that his own experience has fully verified the observations the two first gentlemen mentioned below, uses the following forcible words:

"I daily see many patients in pulmonary consumption advancing towards recovery with so firm a pace, that I hope consumption will henceforward as regularly be cured by the foxglove, as ague by the Peruvian bark. Could we obtain a single auxiliary for foxglove, such as we have in many instances for the bark, I should expect that not one case in five would terminate as ninety-nine in an hundred have hitherto terminated. But I believe a majority of cases will yield to simple foxglove. It is evident that no new cases need be suffered to advance beyond the first stage, without the application of this medicine, and few into it."

* See Dr. James Sanders on Pulmonary Consumption.

† Dr. Fowler of York, Dr. Drake, Dr. Beddoes, Dr. Moffman.

Dr. Drake speaks of it thus:* "It has for several years been given in pulmonary hemorrhage with effect, and certainly will continue to be, with the intelligent, whatever may be the result of its trial in phthisis. I am happy, however, to say, that the success which has hitherto attended the exhibition of the digitalis in phthisis, has been very considerable; several patients in its confirmed state have been cured by this remedy; almost all have been relieved; life has even been protracted by it; and when death has taken place, whilst the system was under its influence, it has been free from pain or struggle; my expectations have been answered, and Dr. Fowler, I understand, from further trials, is fixed in his former favourable opinion."

Dr. Mossman says,† "I have prescribed the digitalis very extensively for upwards of twelve months, and during the last six of that period I have had very ample experience of its powers. I am now fully persuaded, that, by a judicious management of the plant, variously combined, I can obviate pneumonic inflammation with as much certainty as I can arrest the progress of an intermittent fever, by means of the bark of cinchona. Again, I am persuaded, that, if pulmonary consumption be divided into four stages, the digitalis will very certainly cure the three first, and as certainly alleviate the distressing symptoms of the last."

In the primary stages of the complaint, Dr. Mossman is of opinion that this remedy approximates to a specific. He thinks that it possesses in itself‡ a power directly sedative, and that the application of this power, by lessening the irritability of the muscular fibre, will explain its salutary operation in the cure of pulmonary consumption.

From the observations of all these gentlemen, as well as from those of other physicians,§ the digitalis must certainly be admitted to be a very powerful remedy in phthisis; and although it is by no means to be regarded as a specific, still it must be allowed to have, in many instances, procured the most beneficial effects.

In its early stage, when the powers of the system are not broken down, it promises to be productive of very essential service, by moderating the pulse and by diminishing the hectic fever, the most distressing of all the symptoms, and that which seems to hurry on the patient to a fatal termination. After the purulent stage is completely formed, it has appeared to me, however, not to produce any considerable or permanent good effects; but even in this stage of phthisis it has been thought by some physicians to alleviate the sufferings of the patient.

It does not seem that any evil of magnitude can arise from its use in tubercular consumption, if properly exhibited; that is to say, if given in moderate doses about twice a day, and increased in a gradual manner, until it produces a sensible effect on the system.

The most unpleasant symptoms consequent on a liberal and long-

* See Medical and Physical Journal, vol. ii. page 418.

† Ibid. vol. iv. page 309.

‡ See his Essay on glandular Consumption.

§ See Dr. Kinglake's Remarks on the Effects of Digitalis, vol. iii. page 120, of the Medical and Physical Journal.

continued use of this medicine, are vertigo, nausea, and sickness. In one case where the stomach and head were soon disordered by even a small dose, we are informed by Dr. Drake,* that a little lemon-juice produced an immediate good effect, removing both the sickness and vertigo, and enabling him to throw in a larger quantity of the tincture with ease and safety. A few drops of tinct. opii with each dose of the tincture of digitalis, he mentions, sometimes prevent the rejection of the latter from the stomach; but he has not found it very effectual in removing the sensation of languor, or the affection of the head.

The preparation of the digitalis used by Dr. Fowler of York, is a decoction,† of which he directed his patients to take half an ounce twice, thrice, and, in a few instances, four times in the 24 hours. That used by Dr. Drake was the saturated tincture, in the proportion of five ounces of proof spirit, to one ounce of the leaves coarsely powdered, without any dilution of the colour or diminution of strength or taste. Of this saturated tincture he at first gave his patients from fifteen to twenty drops twice a day, which, in some cases, he gradually increased to ninety or an hundred drops with safety, even in patients greatly debilitated, before either sickness or irregularity of the circulation took place.

Dr. M'Lean, of Sudbury in Suffolk, is another gentleman who has favoured us with his sentiments on the foxglove; and although he does not speak of it in such high terms as those of whom I have made mention in the preceding pages, and allows its powers to be limited even in the very early stages, still he is ready to acknowledge that he found it a valuable remedy in consumption.§ He says, "It will sometimes cure, when the most approved remedies fail. When of itself it is insufficient to subdue the disease, it will prove a valuable auxiliary to other means. It has always with me quieted and soothed the sufferings of the patient more or less; and where it ultimately failed, it lengthened the duration of life, and smoothed the avenues to death." He goes on with observing, "This is all I apprehend it will be found capable of performing; but this is doing a great deal. Those who expect wonders from it, or that it will *in general* cure consumption, will be disappointed."

The preparation of the digitalis, recommended and used by Dr. M'Lean, is that of the tincture made according to the formulæ‡ here advised; but he gives a preference to the last, as having the plant in

* See Medical and Phyfical Journal, vol. ii. page 419.
§ See the fame Journal, vol. ii. page 117.

† ℞. Fol. Digital. Purpur. Recent. ℥ij.
Coque ex
Aq. Puræ ℔j. ad Colat. ℥vijfs. et adde
Tinct. Cardamom. ℥fs. M.
℞. Fol. Digitalis Purp. Siccat. ʒi.
Infunde in Aq. Pur. Bullient. ℥viij. et cola.
ft. Infufum.
Dos. ℥fs. ad ℥vj.

‡ ℞. Folior. Digital. Purp. Recent. Exsic. ℥j.
Spirit. Vin. Ten. ℥viij. M.
Digere leni calore per dies feptem, dein cola.

Vel

℞. Folior. Digital. Purpur. Recent. ℥iv.
Spir. Vin. Rectif. ℥v. M.
Digere dies feptem leni calore, dein cola.

its perfect state. He begins with from ten to fifteen drops three times a day, increasing two drops every second day, until the habit feels its influence. He then desists, and afterwards diminishes in the same gradual manner, or augments the dose according to the effect. By these means, he observes, the body may, with the greatest safety, be kept under its influence for weeks and even months. From Dr. M'Lean's report it appears, however, that he never was able to exceed a greater dose than thirty drops repeated three times a day.

With respect to the supposed mode of action of the digitalis, instead of allowing, with Doctors Darwin, Fowler, and Drake, that its good effects depend always upon its power of diminishing secretion, and promoting pulmonary absorption, he observes, that it is equally, and indeed more efficacious in cases where there is no increase of mucus or pus. He attributes the good effects of the remedy in question to its power of correcting the diseased condition of the whole frame, and the train of morbid phenomena resulting from it. His words are, "It is to these I have been disposed to attribute, in a great degree, its salutary effects in this deplorable malady. If it frequently possesses such a control over the heart, as to reduce its contractions from 120, and even 140, to 50 in a minute; if it allays, as it does in a most extraordinary manner, the cough, and irritation of the lungs, and indeed of every part, the advantages thence resulting will be incalculable. The vessels of the diseased lungs will be placed in a condition of secreting bland, healthy fluids; every organ in a state of performing its healthy functions; and thus the unison and harmony which constitute the healthy standard, will be established throughout the body."

In opposition to the theories of Doctors Drake and Fowler, and to that of Dr. M'Lean, with respect to the mode of action of the digitalis, there are some practitioners who allow of its having no other powers than those of a sedative nature. This opinion seems by no means to be well founded. The modus operandi of this plant does not seem, however, to be clearly understood as yet.

Let its powers depend upon what they may, certain it is, that its success is proportioned to its early exhibition; and that therefore in every case, where the disease arises in a phthisical habit, or is clearly marked, it ought to be had recourse to, without any further loss of time. As the saturated tincture recommended by Dr. M'Lean appears to be its best preparation, we should give it the preference.

In administering foxglove, it will be necessary to attend to the state of the pulse under different positions of the body; for it appears by the report of some physicians, that there is a considerable difference of its velocity in the erect and recumbent postures. A case is recorded in the third volume of the Edinburgh Medical Journal, page 271, in which, after taking this medicine, the pulse was not lessened in frequency, when the patient stood erect, being upwards of an hundred. When he sat down, it fell considerably, and when lying on his back, it fell much more. When sitting, it was reduced to seventy-five, and when lying, to forty. The experiment was repeated many times, and always with the same effect. The like singularity is noticed by Dr. Hamilton in his Treatise on Digitalis.

In the early stage of phthisis, the exhibition of an emetic every second or third day is usually attended with a very happy effect, and seems indeed to be one of the most powerful remedies we know of. As such it never should be neglected, with an exception to pregnant women. From the vitriolum cupri having been found to excite vomiting readily and easily, without relaxing the stomach, irritating the intestines, or greatly fatiguing the patients, it has been more generally used in phthisical cases than any other medicine of the same class. The dose is from three grains to ten or fifteen, in proportion to the age of the patient, dissolved in two or three ounces of water. A vomiting is excited soon after it is received into the stomach, on which the patient may drink a pint of water.

Dr. Marryatt* seems to have been one of the first who recommended the employment of the vitriolum cupri as an emetic in phthisical cases. He advises it to be combined with tartarised antimony, in the proportion of seven grains of each, which he directs to be divided into three powders, one of which is to be given twice or thrice a week. When any diarrhœa attends, he gives one grain of the vitriol. cupri with five grains of ipecacuanha. During the operation of the medicine he advises nothing to be drank, for which reason he calls it the dry vomit.

Dr. Senter, in his remarks † on phthisis pulmonalis, assures us, that he has restored more persons labouring under hectic fever from glandular suppuration, by vomiting every second or third day with the vitriol. cupri, and giving in the intervals, as much as the stomach would bear of Dr. Griffiths's myrrh mixture (hereafter to be mentioned,) than by all other methods he has ever read of or tried. He looks upon the blue vitriol to be one of the most safe and efficacious emetics, joined with ipecacuanha, that the materia medica furnishes us with, and advises from seven to ten grains of each, made up into pills, to be taken in the morning fasting, without drinking any thing afterwards.

To the good effects of the mode of treatment pursued by Dr. Senter, I can bear ample testimony, having adopted it in many cases of incipient phthisis with infinite advantage.

When the heat, fever, cough, and pain in the chest, are considerable, the saline mixture with a little nitre and small doses of tartarised antimony, or the pulvis antimonialis, ought to be given three or four times in the course of the day.

As the cough often proves troublesome in the first stage of the disease, as well as in the last, it may be found necessary to make use of some demulcent.‡ In such cases, the patient, besides using these medicines as

* See his Therapeutics.

† See Tranfactions of the College of Phyficians of Philadelphia, vol. i. part 1.

‡ ℞. Decoct. Hordei ℥v.
Lact. Ammon. ℥ij.
Acet. Scillæ ℥ij.
Syrup. Tolutan. ℥iij. M.
ft. Miftur. cujus fumat Cochl. j. vel ij. tuffe urgenti.

Vel

℞. Ol. Amygd. Dulc.
Mucilag. Gum. Arab. ää ℥ij.
Aq. Fontan. ℥iij.
Syrup. Althææ ℥j.
Vin. Antimon. gutt. xxx. M.

Vel

necessity may render needful, should take for ordinary drink what is here† recommended. In this stage of the disease, opiates would be likely to prove prejudicial, and we should resort to them only in those cases where the rest at night is much disturbed. The extractum papaveris albi, in doses of five grains or more, should be preferred to opium. The digitalis, by allaying the irritation of the lungs, in consequence of its retarding the circulation through them, may be of much advantage in appeasing the cough.

A certain quack medicine, ‡ much puffed off for its effects in phthisis pulmonalis, is probably nothing more than a decoction or infusion of this plant with an addition of squills, reduced to the consistence of a syrup with sugar.

The lichen Islandicus is a favourite remedy with the continental physicians, and is daily employed by them in the routine of phthisical cases. The most usual form of exhibiting it is in that of a decoction with milk; or, when this disagrees with the stomach, in water. It is not used, however, indiscriminately in every species of phthisis, nor in every stage of that disorder. It is chiefly recommended in those instances where the cough is attended with purulent expectoration; in cases preceded by, or accompanied with hæmoptysis; in incipient phthisis, where from relaxation there is an increased discharge of mucus from the bronchiæ; in the sequelæ of measles attended with a quick small pulse, pain of the breast, emaciation, violent cough, and purulent expectoration. Of late the lichen Islandicus has become a fashionable remedy likewise among our own physicians, and I have myself prescribed it in several cases of phthisis, but without any evident beneficial effect. It seems indeed better calculated for an article of diet than a medicine.

Such are the means which should be had recourse to during the first stage of phthisis. In the second, and latter stages, we are to counteract, if possible, the effects of the absorbed matter; to mitigate the most distressing symptoms, such as the cough, diarrhœa, and colliquative sweats; and lastly, to put the body into as good general health as possible by air, moderate exercise, and a proper course of mild nutritive food.

No antidote against the poison which especially operates here having been found out, and it appearing that too great a degree of inflammation may have a share in preventing the ulcer from healing, and in urging

‡ The vegetable syrup.

Vel

℞. Sevi Ceti ʒij.
Vitel. Ovi q. s. ad Solut. et adde
Aq. Pulegii ℥v.
Nitr. Purificat. ℈j.
Syrup. Tolutan. ℥ſs. M.

† ℞. Decoct. Hordei ℔ij.
Gum. Arab. ʒiij.
Syrup. Limon. ℥ijſs. M.
ft. Potus.

on its fatal consequences; it has been proposed to employ means for moderating the inflammation in this stage of the disease, as well as in the first. With this view, small bleedings frequently repeated have been advised by some physicians. Drawing off blood, when the disease has arrived at the stage of ulceration, is, in my opinion, exhausting the vital stream very unnecessarily; is adding to debility, and must, therefore, be very improper. The same reasoning will hold good against a use of purgatives.

When we want to lessen the action of the heart and arteries, from the pulse being very frequent, and the patient much troubled with flushing heats, in consequence of hectic fever, we should employ the digitalis, instead of having recourse to such debilitating means; this having been found capable, as has already been observed, of reducing the pulse from 120, and even 140 strokes in a minute, to something below the natural standard.

Dr. Bourne, of Oxford, has published some cases of pulmonary consumption, in which he made trial of the uva ursi; and the dose in which he mostly exhibited it to his patients, was from eight to fifteen grains of the powder three times a day. He is of opinion that it has a very sensible effect in diminishing the hectic fever, and in abating the increased frequency of the pulse dependant thereon. It appears that he was first induced to make use of it in phthisis, from having remarked its good effects in a disease of the urinary organs, attended with a discharge of muco-purulent matter along with the urine, and accompanied with all the usual characteristics of hectic fever.

The uva ursi is possessed of considerable astringency, and to the taste is slightly bitterish; but neither its sensible properties, nor its immediate effects on the system, point it out as a medicine of great activity.

In the second stage of the disease, the employment of emetics must be duly persisted in, every second or third morning, in the manner advised during the first stage.

As detergents, different balsamics have been much used in the ulcerated stage of the disease. Balsam of copaiba, in the dose of from twenty to thirty drops twice or thrice a day, may be tried. Myrrh is, however, the medicine which is employed with the greatest success in those cases of hectic fever which are unattended by any great degree of heat or thirst, and which do not shew manifest signs of inflammation. The preparation * used by the late Dr. Moses Griffiths seems to be preferable to all others. If at any time it should be thought

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* ℞. Myrrhæ ʒj. Solve terendo in mortario cum
Aquæ Alexiter. Simpl. ℥vjss.
Spirit. Pimento ʒvj. dein adde
Kali Præparat. ʒss.
Ferri Vitriolat. gr. xij.
Syrup. Simplic. ʒij. M.
ft. Miſtura, in Hauſtus quatuor diſtribuenda, quorum unum capiat mane, hora quinta poſt meridiem, et hora decubitus.

too heating, the spirituous water may be omitted, as the solution may be made without it; but it is a doubt, if it will agree so well with the stomachs of patients in general.

The myrrh may gradually be increased to seventeen or eighteen grains for a dose, the kali præparat. to ten, and the ferr. vitriolat. to four. But it is always best to begin with small doses, and, as the symptoms abate, to give two draughts a day, containing eighteen or twenty grains of myrrh, twelve of the kali præparat. and five or six of the ferrum vitriolatum, which is the largest dose that should be taken. This medicine, although a little nauseous at first, is nevertheless seldom rejected by the stomach, or excites any kind of disturbance in the habit afterwards.

Where hectic heats and flushings prevail in a high degree, and the pulse is very frequent, it probably might be most advisable to omit the last article entirely.

Dr. Beddoes has expressed a wish that we could obtain a single auxiliary to foxglove, as that then he should expect that not one case in five would terminate as ninety-nine in an hundred have hitherto done. I would propose this myrrh mixture of Dr. Griffiths, and vomiting twice a week, with the vitriol. cupri, as mentioned in the preceding pages. A proper dose of the tincture of digitalis may be added to each of the myrrh draughts, and so be given together. This plan of proceeding I have adopted in several cases, and with much seeming advantage.

Should the mixture not sit easy on the stomach, or be objected to on account of its nauseous taste, we may then form the myrrh and other ingredients into pills,* and give the digitalis in about an ounce of the infusion of quassia.

The Peruvian bark has been employed in the ulcerated stage of phthisis; but if ever it proves serviceable, it can only be when the morning remissions of the fever are considerable, and the noon exacerbations well marked. In all other cases it will be likely to prove prejudicial.

The reason why pulmonary ulcers are prevented from healing, is their being constantly exposed to the air. It is remarkable that matter produced by suppuration may be concealed in the body many weeks, or even months, without producing hectic fever; but as soon as the wound is opened, so as to admit air to the surface of the ulcer, a hectic fever very quickly supervenes.

The suckling of children longer than is consistent with the mother's ability, is sometimes a cause of pulmonary consumption; but more particularly among the lower class of females, who are of a tender and

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* ℞. Myrrh. Pulv. ʒij.
Ferri Vitriolat. ℈j.
Kal. Præparat. ʒj.
Extract. Gentian. ʒjs.
Syrup. Simpl. q. s. M.
ft. Massa in pilulas LXX. distribuend. quarum sumat iij.—iv. ter in die.

delicate constitution. In such cases, the bark given early in moderate doses, and merely as a tonic, is often attended with the best effect.

Where a disposition to consumption arises in consequence of any enfeebling evacuation, such as a considerable abscess, fluor albus, or the like, without any inflammation of the lungs having yet taken place, the bark will likewise prove serviceable, and may be given as advised below.† After inflammation has come on, or ulceration has commenced, it would not fail to prove injurious, by increasing the cough and the tightness and oppression of breathing.

To counteract the effects of absorption, vegetable acids, such as oranges, and other fruits yielding an acid but not acrid juice, have been much recommended. When they do not affect the bowels they may be given freely with the powder of sarsaparilla. Fresh subacid fruits, although supposed to be usually laxative, are often useful in the diarrhœa of hectics, by their antiseptic quality.

In this stage of the disease, as well as in the incipient, we are to obviate inflammation, and divert the matter, if possible, by means of blisters, issues, or a seton.

To palliate the cough, which is very apt to prove troublesome, and to assist the expectoration, we may have recourse to demulcents as before advised. If the patient's rest is much disturbed by night, we may employ opiates; and although they are supposed to increase the phlogistic diathesis, and in some degree to check the expectoration, still they amply compensate for these by the ease and sleep they procure.

In slow hectic fever attended with frequent flushings and profuse night-sweats, and with much coughing and fetid purulent expectoration, Seltzer water will often in a high degree check the violence of perspiration, diminish the discharge from the lungs, and correct its fetor; and under the operation of this medicine the patient will for a time be able to gain quieter nights, and a better appetite. Seltzer water mixes well with milk, and will not soon coagulate it; which mixture has been strongly recommended in cases of hectic fever with expectoration. In very irritable habits it may be highly necessary to dilute the water in this way, as in its simple state it might prove too powerful.

When the sweats are profuse, the infusum rosæ, with a sufficient quantity of diluted sulphuric acid, will be a good medicine to check them, and may answer instead of Seltzer water. When a diarrhœa arises, it is to be stopped by astringents combined with opium, as recommended under that head. For common drink, the patient may take the decoctum cornu cervi, or arrow-root.

By the consent between the intestines and skin, twenty grains of

† ℞. Kal. Præparat. ℥ij.
Succ. Limon. ℥j.
Decoct. Cinchon. Flav. ℥v. M.
ft. Mistura, cujus capiat Cochl. ij. bis terve in die.

Vel

℞. Decoct. Cinchon. Flav. ℥v.
Aq. Ammon. Acetat. ℥j. M.
ft. Mistura.

Armenian bole given on going to bed to hectic patients, will frequently check their tendency to sweat as well as to purge, and the more certainly if joined with one grain of opium.

The strength is to be supported by food of a light nature, but which is at the same time highly nutritive; and the different exercises, such as sailing, and riding in a carriage or on horseback, but more particularly the latter, should be taken daily in fine weather. When the inflammatory diathesis is subdued, chalybeates, combined with myrrh and prepared kali, may be given with much advantage. The aqua calcis will be a good menstruum for dissolving the myrrh.

Should we be so fortunate as to subdue the disease by the means which have been pointed out, it will be indispensably necessary for the patient to persevere in employing the regimen recommended in the treatment of this complaint, for a considerable length of time after every symptom has disappeared; and he should return to his former manner of living with the utmost caution.

Some practitioners, from considering pulmonary consumption as entirely of a scrofulous nature, disapprove highly of the antiphlogistic plan, by bleeding and a spare diet, even in the first stage of the disease. Instead of these, they recommend a nutritious diet, consisting of shell-fish and animal food; the use of cicuta and sarsa in powder as medicines; warmth in the dress, by wearing flannel next to the skin, and at the same time heating the patient's room to the West India point, where he cannot remove to a warmer climate; the application of blisters, and frequent smart riding on horseback by way of exercise.

With regard to the remedies usually employed in the treatment of phthisis, Dr. Ferriar has observed, that the digitalis with the ferrum vitriolatum, myrrh, bark, and other tonics, may be most proper in those cases of consumption which arise from scrofula; while the digitalis with opium, mucilaginous medicines, and diuretics, may be opposed to the florid consumption.

In that variety of the disease which appears to be occasioned by an enlarged and indurated state of the abdominal viscera, or the lymphatic glands of the mesentery, we are informed by Dr. Wilson * that he found mercury a valuable remedy, and that he has seen the patient saved by it almost in the last stage, after the purulent expectoration and hectic fever were completely formed.

Mercury is, indeed, a remedy which of late has been much recommended, and sometimes employed in the early stages of phthisis pulmonalis, by many physicians in America, but more particularly by Dr. Rush, and they give it not only internally, but likewise use it in the form of unction, so as to excite some degree of ptyalism. It promises, I think, to be of service in those cases in which Dr. Wilson has used it, but in no others.

* See his Treatise on Febrile Diseases, vol. iv.

Of the NEGRO CACHEXY, or CACHEXIA AFRICANA.

THIS disease, known by the name of mal d'estomach among the French and by that of dirt-eating in our West India colonies, is frequently to be met with among negroes, but more particularly those imported from Africa. Mons. Sonini makes mention, in his Travels through Egypt, that a propensity for eating earth is a disease frequently to be met with likewise among the Egyptians. Between it and chlorosis there is in many respects a great similarity; but they differ in this circumstance, that the latter only affects females, and that principally about the age at which menstruation ought to commence; whereas the former affects males as well as females, and is often to be met with in children of six or seven years old, as I have seen happen in various instances.

It evidently arises from a want of due energy or vigour in the system, induced by various debilitating causes, as grief and despondency, occasioned by their being separated from their families and friends, and reduced to a state of bondage; by poor diet, hard labour, and harsh treatment. With some the disease is however constitutional, and proceeds from general relaxation, a vitiated state of the stomach, and bad digestion. Negroes imported from the coast of Africa, who are of an inactive indolent habit, and children of lax fibres, and who have been badly nursed and afterwards neglected, are most liable to its attacks.

Nostalgia, in which there prevails an unaccountable desire of returning to one's own country, is a disease somewhat similar to the negro cachexy. The Swiss are said to be particularly liable to it, and when taken into foreign service, very frequently desert from this cause. Its effects on the Africans are more violent, and not unfrequently impel them to dreadful acts of suicide. Sometimes it plunges them into deep and incurable melancholy, which induces the unhappy sufferers to end a miserable existence by a more tedious, though equally certain method, that of dirt-eating.

Cachexia Africana shews itself by a fondness for solitude, and an indulgence in grief and despondency; together with a loss of appetite, constant pain in the stomach, difficulty of breathing upon the least bodily exertion, paleness of the face and palms of the hands, whiteness of the tongue, with an appearance like stains of ink upon it, whiteness of the lips, drowsiness, inactivity, unwillingness to attempt and inability to perform motion, and general debility. The tunica adnata is of a glassy whiteness, the skin of an olive complexion and cold to the touch; the eyelids, face, and extremities shew evident signs of an extravasation of water in their cellular membrane; and the unhappy sufferer can only breathe in an erect posture, from water being likewise collected in the chest and cavity of the abdomen. The stools are at the same time of a white or clay colour, the urine is scanty, and the pulse is always small, and generally becomes quicker as the night approaches.

In consequence of the vitiated state of the gastric juice and impeded digestion, a morbid acidity prevails, and a symptom arises from this

cause, which with some has given name to the disease, viz. a habit of dirt, chalk, or whatever will obtund acrimony.

This vitiated action is propagated throughout the whole alimentary canal; the lacteals are abraded by acrimonious fluids, and no longer possess the power of absorbing healthy chyle; hence the lymphatic glands become indurated and inflamed; the liver also is enlarged and of a scirrhous hardness; the blood, poor, vapid, and colourless, no longer stimulates the heart and arteries to action; hence asphyxia and sudden death.

Fatal consequences usually attend this disease. On dissection, the stomach is often found much enlarged and thickened in its coats, the liver is of an increased size, scirrhous, and always preternaturally white; biliary concretions are sometimes met with in the gall-bladder; the bile is never of a healthy appearance, but usually of a thin watery consistence, and of a slightly yellow or fresh colour; the mesenteric glands are indurated and scirrhous, and polypous concretions are found in the heart.

The proper indications of cure seem to be, first, to strengthen the general system, and give due energy to the constitution; and secondly, to correct the morbid acidity which prevails.

To answer the first of these purposes, the patient must be allowed a generous and nutritive diet, consisting principally of animal food and wine, or weak fermented liquors. Cane-juice boiled to the consistence of a thin syrup (as in the first process of sugar-making) is also of a restorative nature, and ought during crop-time to be allowed liberally. With a generous diet, the patient should be made to take moderate exercise daily, as a want of this will not fail to increase the general debility, and add to the disease. Warm clothing, with occasional frictions by means of flannels, will likewise be proper.

To assist the effects of these means, we must put the patient under a course of bitters joined with aromatics, different preparations of the Peruvian bark, with myrrh and chalybeates, as advised under the head of Dyspepsia.

The antihectic mixture of Dr. Griffiths (see Phthisis) will be likely to prove a most valuable remedy in this disease.

The second indication is to be answered by alkalies and absorbents, as likewise recommended under the head of Dyspepsia. The exhibition of an emetic of the vitriolum cupri once or twice a week, as advised in phthisis, seems likewise proper.

When costiveness prevails, it ought to be removed by a use of some warm stomachic laxative, such as the tinctura rhabarbari composita, or tinctura aloes composita.

If the disease has been of such standing as to be attended with anasarcous swellings, besides using the means already recommended, we must have recourse to diuretics, as advised in dropsy.

Where it is accompanied with a retention of the menses, we must endeavour to promote these by calling in the assistance of emmenagogues. See Chlorosis.

In order that the depravity of appetite may not be indulged, the patient

should be lodged in a room which has a boarded floor, and where he cannot possibly get any dirt; and when he goes out for exercise, he should be accompanied by an attendant, who will not permit him to eat it.

Dr. Chisholm, in his ingenious Essay on this disease,* says it is remarkable, that negroes, who are subject to it, have been much benefited by living in a low situation, near marshes, which quickly prove fatal to whites; and he had long observed this before he formed any theory on the subject. He adds, perhaps the hydro-carbonic air may act as a cordial; it is perhaps the nervous æther itself. It has been remarked by medical writers, that the attack of remittent marsh fevers is frequently preceded by an unusual flow of spirits.

From my own observations, during a long residence in the West Indies, I am ready to admit with Dr. Chisholm, that mountainous situations do not agree with cachectic negroes as well as low ones; but I cannot with him attribute the effect to the influence of marsh effluvia. Noxious vapours arising from stagnated waters and marshy grounds, acted upon by a powerful sun, prove, in warm climates, a never-failing source of disease under all circumstances, and under every condition of the body. The cachectic negro cannot endure the cold, chilling, and damp air of a mountainous situation; but in a low one (the more remote from marshy grounds or stagnant waters the better) he feels warm and comfortable, and breathes a pure dry air, moderated in its temperature by the refreshing and reviving breezes which come off the sea.

Of the CHRONIC THRUSH,† or APHTHA CHRONICA.

CHRONIC thrush is a disease very frequently to be met with among the inhabitants of our West India colonies, many cases of it having occurred during my practice there, but which is likewise apt to prevail in those northern countries where the cold is combined with a considerable degree of moisture, or where the soil is of a very marshy nature. It may in some cases be considered as an idiopathic affection, but it is more usually symptomatic.

It shews itself at first by an uneasy sensation or burning heat in the stomach, which comes on by slow degrees, and increases gradually in violence. After some time, small pimples, of about the size of a pin's head, appear on the tip and edges of the tongue, and these at length spread over the whole inside of the mouth, and occasion such a tenderness and rawness of the parts, that the patient cannot take any food of a solid nature; neither can he receive any vinous or spirituous liquor into his mouth, without great pungency and pain being excited; little

* See the New-York Medical Repository.

† The common species of aphtha, as principally affecting infants, is included among the diseases peculiar to them; but in Dr. Cullen's nosological arrangement it stands among the Exanthemata.

febrile heat attends, but the skin is always remarkably dry and without the least moisture on it; the countenance is pale, the pulse is smaller and more languid than in health, and a general coldness is felt over the whole body, but more particularly in the extremities.

These symptoms will continue probably for some weeks, the general health being sometimes better and sometimes worse, and then the patient will be attacked with acid eructations, and a vomiting of acrid phlegm, as likewise with a severe purging, which greatly exhausts his strength, and produces considerable emaciation of the whole body. After a little time, these symptoms cease, and he again enjoys better health; but, sooner or later, the acrid matter shews itself once more in the mouth, with greater virulence than before, and makes frequent translations to the stomach and intestines, and so from these to the mouth again, until at last the patient is reduced to a perfect skeleton.

General relaxation, exposure to cold combined with great moisture, obstructed perspiration, and an acrimony of the humours, are supposed to be the causes which give rise to the chronic thrush. Elderly people and persons with a shattered constitution are most liable to its attacks.

Even at an early stage of the disease, it is often difficult to effect a permanent cure; but when it has been neglected, is of long standing, or has made its attack at an advanced period of life, it will most probably, after a time, terminate fatally.

The principal appearances to be observed on dissection are the aphthæ, which extends through the whole of the alimentary canal. The muscles throughout the body are relaxed and flaccid, and their connecting cellular membrane is divested of any fat.

It will in all cases be advisable to begin the cure with giving a gentle emetic, to dislodge the acrid phlegm with which the stomach is usually loaded; and if any acidity prevails afterwards (which may be known by sour belchings attended with a degree of heat and pain,) a little magnesia, or a small quantity of the absorbent mixture* here recommended, may then be taken occasionally.

Wherever we suspect the disease to have arisen, or to be kept up from the ingesta, then, besides an emetic, it may be right cleanse the primæ viæ by some gentle cathartic; as the irritating matter, when permitted to accumulate in the alimentary canal, increases the morbid affection of the intestines. A combination of rhubarb with magnesia will be a proper laxative; manna and the cassia fistularis will likewise be suitable remedies. Medicines of this nature are however to be administered only in the first stage of the disease, as the risk of inducing excessive purging more than counterbalances the chance of advantage from them. In an advanced stage of the disease, where it is

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* ℞. Magnes. Alb. ʒj.
Aq. Puræ ʒvfs.
Spirit. Cinnam. ʒiij.
Aq. Ammon. Pur. ʒj. M.
Capiat Cochl. ij. pro re nata.

found necessary to evacuate the intestines, emollient clysters may be employed.

When the purging shews a tendency to become excessive, we should, in order to put a stop to it, have recourse to astringents joined with opiates, agreeable to the prescriptions below,* or as advised under the head of Diarrhœa; besides which, the patient should drink about a pint a day of the decoctum cornu cervi, or the same quantity of lime-water with an equal proportion of milk.

Where there is no tendency to excessive purging, opiates perhaps may be omitted, unless they be necessary to procure sleep. Where symptoms denoting a tendency to visceral inflammation shew themselves, opiates would be improper.

With the view of determining the humours to the surface of the body, it will be right to give frequent small doses of some diaphoretic, such as the pulv. ipecac. compos.; and, to assist their operation, flannel should be worn next to the skin. Should these fail in exciting a proper perspiration, and the patient continue to waste in flesh, a tepid bath may prove serviceable, and where a natural one can be procured, it ought to have the preference.

To remedy the inconvenience arising from the soreness of the mouth and tongue, these should be washed frequently with some kind of healing astringent gargle.†

When the rectum is affected, mild injections are proper, and produce effects similar to those of gargles in the fauces: they should consist of mild mucilaginous and gently stimulating decoctions, such as veal-broth boiled with rice and bruised turnips, or turnip-radishes, which will likewise prove an excellent article of diet.

In the mildest cases of the disease, a decoction of the Peruvian bark is often used internally, and with much advantage. In those cases where it puts on an alarming appearance, this preparation should be employed as a gargle, and the powder be administered in as large doses as the stomach will bear. If it excites a purging, a few drops of tinct. opii may be added to each dose.

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* ℞. Confect. Catechu ʒij.
Aq. Cinnam. ʒij.
——Puræ ʒiij.
Tinct. Kino ʒij.
——Opii gutt. xl. M.
ft. Mistura cujus sumat Cochl. ij. vel iij. ter in die.

Vel

℞ Mistur. Cretac. ℥iv.
Spirit. Cinnam. ʒj.
Tinct. Catechu ʒij.
——Opii gutt. xl. M.

† ℞. Infus. Rosæ ℥vj.
Alum. Purif. ʒjſs.
Mel. Optim. ʒj. M.
ft. Gargarisma.

Vel

℞. Zinc. Vitriolat. gr. x.
Aq. Rosæ ℥viij. M.

Vel

℞. Decoct. Hord. Comp. ℥vj.
Mel. Rosæ ʒj.
Alum. Purif. ʒj.
Tinct. Myrrh. ℥ſs. M.

Vel

℞. Boracis in Pulv. trit. ʒjss.
Aq. Fervent. ℥v.
Mellis Rosæ ʒj. M.

The diet in this disease should consist only of such things as are light and nutritive: as milk, mucilaginous soups, jellies, preparations of barley, sago, rice, Indian arrow-root, plantains, bananas, &c. Port wine diluted with water may be used for ordinary drink.

To restore the lost vigour and tone of the system, astringent bitters, with chalybeates, myrrh, and other tonics, may be used, as advised under the head of Dyspepsia, together with such moderate daily exercise as the strength will admit of. If the patient's circumstances will allow of his removing to a cold climate where the air is dry, he should do it before the disease becomes inveterate.

ORDER II.

INTUMESCENTIÆ.

SWELLING of the whole or a great part of the body externally.

I. FATTY SWELLINGS, *or* INTUMESCENTIÆ ADIPOSÆ.

OF CORPULENCY, OR POLYSARCHIA.

CORPULENCY, when it arrives at a certain height becomes an absolute disease. The increase of the omentum particularly, and the accumulation of fat about the kindeys and mesentery, swell the abdomen, and obstruct the motions of the diaphragm; whence one reason of the difficulty of breathing, which is peculiar to corpulent people; while the heart and the large vessels connected therewith, are in like manner so encumbered, that neither the systaltic nor subsultory motion can be performed with sufficient freedom, whence weakness and slowness of the pulse; but when the whole habit is in a manner overwhelmed with an oily fluid, the enlargement of the cellular interstices, will necessarily interrupt the general distribution and circulation throughout the nervous and vascular systems, impeding the action of muscular fibres, and producing insensibility, somnolency, a disposition to apoplexy, and death.

The disease generally steals on so imperceptibly, that it becomes inveterate before people begin to think of pursuing any means for obviating it.

To get rid of too much fat without any injury to the constitution, the patient should in a very gradual manner diminish the usual quantity of his aliment; he should drink as little as he can with ease to his sensations; he should use regular and daily active exercise; abstain from suppers; take short rest; sleep but few hours, and rise early every morning. To assist these means, and compress the bowels (increasing their absorption probably thereby,) he may put a proper bandage on the belly, so that it can be tightened or relaxed with ease. An underwaistcoat with two or three rows of buttons will answer this purpose very well.

As medicines, diaphoretics, with an occasional use of moderate purging, may be employed. Soap has been recommended to melt down and facilitate the absorption of the fat in corpulent people; but, probably, the aqua kali would be more powerful. Diuretics might possibly be used with advantage. The aërated alkaline water, which may be supposed to render the fat more fluid at the same time that it determines to the kidneys, may be employed by the patient for his ordinary drink.

Vinegar and lemon-juice are too frequently used by young women to reduce corpulency; but an excessive use of acids is apt to destroy the digestive powers, and in the end to bring on a train of complaints.

Before I take leave of the subject, it seems necessary to observe that every practice for the prevention or removal of corpulency, must be used with great caution and prudence; for not a few, anxious to obviate this affection, have fallen martyrs to too rigid a regimen and improper medicines.

II. Flatulent Swellings, *or* Intumescentiæ Flatuosæ.

Of EMPHYSEMA.

THIS disease consists in a collection of air in the cellular membrane. In general, it is confined to one place; but in a few cases it spreads universally over the whole body, and occasions a considerable degree of swelling.

It sometimes arises spontaneously, which is however a rare occurrence, or comes on immediately after delivery, without any evident cause; but it is most generally induced by some wound or injury done to the thorax, and that affects the lungs; in which case, the air passes from these, through the wound, into the surrounding cellular membrane, and from thence spreads sometimes over the whole body.

Emphysema is attended with an evident crackling noise, and elasticity upon pressure; and sometimes with much difficulty of breathing, oppression, and anxiety.

We are to consider it as a disease by no means unattended by danger; but more probably from the causes which give rise to it, than any hazard from the complaint itself.

The intentions of cure which we should have in view must be, first, to remove the causes of the disease: secondly, to relieve the urgent symptoms; and thirdly, to evacuate the collected air.

To answer the first of these, the assistance of surgery will be necessary, as arising most commonly from a wound or other injury done to the thorax, which at the same time affects the lungs, as in the case of a fractured rib, the ragged edges of which penetrate the pleura and substance of the lungs, and thereby admit of an extravasation of air into the cellular membrane.

Violent dyspnœa and anxiety are to be relieved by bleeding and

laxatives; and the pain and uneasiness arising from the distention, by relaxing applications to the skin, such as the unguentum spermatis ceti.

The air is to be evacuated by scarifications into the cellular membrane, made in different parts of the body, as circumstances may require, assisted by proper pressure with the hand.

Of TYMPANY, or TYMPANITES.

TYMPANY consists in a violent distention either of the intestines, or cavity of the abdomen, by wind. In the former instance it has been supposed to arise from the sudden suppression of diarrhœa, or dysentery, or as a consequence of febrile diseases, or the sudden drying up of long continued discharges; from cutaneous eruptions, or a use of crude vegetable aliment; and in the latter, from an erosion of the intestines, the effect also of preceding complaints.

The disease sometimes comes on suddenly in fevers, and is usually preceded (be the cause what it may) by great flatulency, borborygmi, and a frequent expulsion of air upwards, and downwards, attended with colic pains. As it advances, the abdomen becomes considerably distended, and retains the same figure under every variation of position. The swelling does not yield much to pressure, and in what it does, it soon recovers its former state; it feels very elastic, and sounds like a drum, but no fluctuation can be perceived. The urine at first is not altered either in quantity or quality; but in the advanced stage of the disease a change takes place in both respects, and dysuria, and even ischuria, sometimes come on. The body is usually very costive, the appetite is impaired, thirst, heat, and pyrexia attend, and general emaciation ensues.

In time, the respiration becomes difficult, with much anxiety and cough; the strength is exhausted, the belly is enormously swelled, and the patient is not unfrequently destroyed in consequence of supervening gangrene.

Tympanites is easily to be distinguished from ascites, by the absence of fluctuation, by the tense feel of the abdomen, by the quick re-action of the parts after removing the pressure of the finger; by the frequent desire to belch, and by the state of the bowels and urine at the commencement of the disease.

It is, almost in every instance, an obstinate and dangerous disease, slow in its symptoms, marking a total relaxation of the system, and therefore it frequently terminates in dropsy, shewing the same emaciation of countenance, dry cough, and hectic state, in the end.

When the wind is confined within the intestines, its evacuation is to be attempted by introducing an unarmed clyster-pipe up the rectum, and keeping it there for some time, so as to take off the resistance of the sphincter; and by giving carminatives, essential oils, spice, stomachics,

and tonics, which may be joined as in the following forms,* or as advised under the head of Dyspepsia; and when costiveness prevails, by an occasional use of laxative medicines, joined with aromatics and essential oils, or clysters † frequently repeated.

Should these gentle means fail in procuring sufficient evacuations, we must then employ active purgatives;‡ and where there is great irritability of the stomach, with nausea, and frequent vomiting, it will be advisable to give them in the form of a pill, as being most likely to be retained. If the disease resists all our endeavours, and the bowels continue obstinately costive, with increasing distention, thirst, heat, and other symptoms of pyrexia, we should then have recourse to the lancet, in order to guard against supervening inflammation and its consequences. It is only in acute attacks, however, that we need dread such a termination.

Antispasmodics of the strongest kinds, such as asafœtida, æther, &c. with infusions of horse-radish and ginger, together with chalybeates, are remedies which have sometimes proved useful in tympanites.

To excite the action of the distended intestines, it has been recommended, along with these remedies, to apply cold substances, such as iced water or snow, to the belly, after which it is to be bandaged tight with flannel. A case of severe tympanites lately came under my care, wherein very great benefit was derived from the frequent application of pounded ice to the abdomen. It is probable that frictions with turpentine, oils, the linimentum ammoniæ fortius, or the linimentum camphoræ and the hand, might afford some relief, and excite the intestines, when assisted by other proper means, to discharge the accumulated air. The application of a blister may be tried if these means fail.

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* ℞. Pulv. Aromat.
Extract. Gentian. āā gr. x.
Ol. Anisi gutt. ij.
Syrup. Zingib. q. s. M.
ft. Bolus 4ta quaq. hor. sumendus.

Vel

℞. Infus Cort. Peruv. ℥j.
Tinct. Cardam. C.
Spirit. Pimento āā ℥ij.
——— Lav. Comp. ℥fs. M.
ft. Haustus.

Vel

℞. Infus. Quassiæ ℥j.
Tinct. Columb.
Spirit. Carui āā ℥ij.
Ol. Anis. (supr. sacch. infril.) gutt. ij.
M.
ft. Haustus.

† ℞. Sem. Anis. Contus. ℥iij.
Flor. Chamæmel. ℥ls.
Coque ex Aq. Fontan. ℔bjfs. ad ℥xij.
Colat adde
Natri Vitriolat. ℥fs.
Ol. Olivæ ℥j. M.
ft. Enema.

‡ ℞. Tinct. Sennæ Comp. ℥j.
——— Jalapii ℥ij. M.
ft. Haustus.

Vel

℞. Pulv. Rhabarb.
——— Jalapii āā ℈j.
Calomelanos gr. v.
Syrup. Simpl. q. s. M.
fiat Massa in Pilulas x. pro dos. distribuenda.

Vel

℞. Extract. Colocynth. C. ℈j.
Calomelanos gr. v.
Ol. Carui gutt. iij. M.
et in Pilulas v. divid. pro dos.

It has been proposed as a query,* whether the cold bath, continued long enough to become antispasmodic and relaxant, might not produce good effects in this disease, as well as in trismus?

To afford relief in desperate cases, where the air is diffused in the cavity of the abdomen, it may be necessary to have recourse to the operation of paracentesis or tapping. In this case, tonics will likewise be advisable.

During the continuance of the disease, that aliment which is least apt to prove flatulent should be taken, and such things be given as will check the fermentation of the food. The mineral acids, and small quantities of ardent spirits, will have this effect.

Should we be so fortunate as to remove the disorder, the patient must pay particular attention to his diet, avoiding all food of a flatulent nature, and using only such as is light and easy of digestion. He is at the same time to guard against costiveness, by an occasional use of some stomachic aperient, and to invigorate his body by gentle exercise, and the other tonic means advised under the head of Dyspepsia.

III. Watery Swellings, *or* Intumescentiæ Aquosæ.

Of the DROPSY, or HYDROPS.

DROPSY is a preternatural collection of serous or watery fluid in the cellular substance, or different cavities of the body, and receives different appellations, according to the particular situation in which it is lodged.

When it is diffused through the cellular membrane, either generally or partially, it is called anasarca.

When it is deposited in the cavity of the cranium, it is called hydrocephalus.

When in the chest, hydro-thorax, or hydrops pectoris.

When in the cavity of the abdomen, ascites.

In the uterus, hydrometra; and within the scrotum, hydrocele.

Water is likewise encysted in the ovarium now and then, and is named ascites ovarii.

Infants, youth, and adults, are equally liable to these effusions in the various cavities of the body.

The causes of these diseases are, a family predisposition thereto, frequent salivations, excessive and long-continued evacuations, a free use of spirituous liquors (which never fail to destroy the digestive powers,) scirrhosities of the liver, spleen, pancreas, mesentery, and other abdominal viscera; preceding diseases, as the jaundice, diarrhœa, dysentery, phthisis, asthma, gout, intermittents of long duration, scarlet fever, and some of the exanthemata; a suppression of accustomed evacuations, the sudden striking in of eruptive humours, ossification of the valves of the heart, polypi in the right ventricle, aneurism in the arteries, tumours making a considerable pressure on the neighbouring parts, permanent obstruction in the lungs, rupture of the thoracic duct, exposure for a length of time to a

* See Dr. Temple's Practice of Physic, page 234.

moist atmosphere, laxity of the exhalants, defect in the absorbents, topical weakness, general debility, and whatever powerfully disposes the body to a state of relaxation.

Of DROPSY in the CELLULAR MEMBRANE, or ANASARCA.

THIS species of dropsy shews itself at first with a swelling of the feet and ancles towards evening, which for a time disappears again in the morning. The tumefaction is soft and inelastic, and when pressed upon with the finger, retains its mark for some time, the skin becoming much paler than usual.

By degrees the swelling ascends upwards, and occupies the trunk of the body, and at last, even the face and eyelids appear full and bloated: the breathing then becomes difficult, the urine is small in quantity, high-coloured, and deposits a reddish sediment; the belly is costive, the perspiration much obstructed, the countenance yellow, and a considerable degree of thirst, with emaciation of the whole body, prevails. To these symptoms succeed torpor, heaviness, a troublesome cough, and a slow fever.

In some cases the water oozes out through the pores of the cuticle; in others, being too gross to pass by these, it raises the cuticle in small blisters; and sometimes the skin, not allowing the water to escape through it, is compressed and hardened, and is at the same time so much distended, as to give the tumour a considerable degree of firmness.

The disease is always to be regarded as admitting more readily of a cure, when it arises from topical weakness or general debility, than when it has been occasioned by visceral obstruction; as likewise when recent, than where it has been of long continuance. The skin becoming somewhat moist, with a diminution of thirst, and an increase in the flow of urine, are to be regarded as very favourable symptoms. In some few cases, nature makes powerful efforts of her own accord, and the disease goes off by a spontaneous crisis, either by a vomiting, purging, or an unusual discharge of urine; but this does not often happen.

On opening the bodies of anasarcous persons after death, the whole of the cellular membrane is found distended with an aqueous fluid; the glands and the liver indurated and often suppurated; and there are ossifications as well as polypi in the larger blood-vessels. The consistence of the blood itself is more or less altered, according to the degree of the disease, and the intensity of its causes. The effused fluid is for the most part serous.

In the cure of anasarca we are to keep in view the three following indications:

1st, To remove the remote causes of the disease:

2dly, To evacuate the serous fluid already collected: and,

3dly, To restore the tone of the system, and strengthen the general habit.

We should always carefully investigate, in dropsical cases, whether the disease is an original one, or prevails as a symptom of some other; for by removing the cause we shall often be enabled to perform a cure. For instance, if it has arisen as the consequence of intemperance, a free use of spirituous liquors, exposure to a moist atmosphere, or the having had recourse to large evacuations, particularly by bleeding, these ought carefully to be avoided in future; or if it has proceeded from long continued intermittents, obstructions in the abdominal or thoracic viscera, and the like, these should be obviated.

In the treatment of anasarcous swellings arising from the pressure of a tumour on some large lymphatic, the only thing that can be done is to remove it. When weakness of a limb, in consequence of a sprain or some contusion, has given rise to these swellings, the best method of cure will be to support the weakened parts, either with a laced stocking or a flannel roller, to prevent their yielding to distention, till in the course of time, and by the effects of cold bathing and moderate frictions, they recover their natural tone.

When œdematous swellings come on in consequence of any of the lymphatic vessels of a limb being cut, as sometimes happens in extirpating indurated glands from the axilla, small punctures made in the under part of the limb will afford immediate relief.

The treatment of the diseases on which dropsy may depend, has already been pointed out in various parts of this treatise, each under its distinct head; but unfortunately it may, and does sometimes depend on diseases which are incurable, such as polypi of the heart, ossifications of its valves and great vessels, erosions of the thoracic duct, and scirrhosity of the liver, spleen, &c. In such cases, medicine will avail but little.

To answer the second indication, of evacuating the serous fluid already collected, we must either have recourse to openings made immediately into the cellular membrane, or we must endeavour to excite certain serous excretions.

The openings most frequently used in anasarca are either slight scarifications or small punctures. In having recourse to these, we should, however, take care to avoid them in parts that are dependent, and they should be made so superficial as to extend to no greater depth than the cellular membrane, as deep incisions in dropsical parts are very apt to become gangrenous. To promote a discharge of the water by the several orifices, the parts may be bathed three or four times a day with some kind of emollient fomentation.*

At an early stage of dropsy, issues made with caustic below one or both knees, have sometimes been employed to evacuate the water from the upper parts; but they are by no means so safe as small punctures or slight scarifications, and if inserted in parts that have lost their tone, might terminate in gangrene.

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* ℞. Fol. Malvæ
Flor. Chamæmel. āā ℥jſs.
Aq. Fontan. ℔iv. Pauliſper Coque, et Cola.

With the like intention of drawing off the water from anasarcous limbs, blisters have sometimes been applied; but the objection which has been urged against the use of issues, applies equally to these, and therefore they should be resorted to with great circumspection and caution.

The application of colewort-leaves to the legs and feet of anasarcous persons, is another way which has been proposed for drawing off the water; but although they become imbued with moisture, still their effect is too trifling to be depended upon.

An excitement of the different excretions is the other mode which has been proposed for carrying off the fluid diffused throughout the cellular membrane. This is to be done by emetics, purgatives, diaphoretics, and diuretics, all of which, by their evacuating effects, tend to increase the power of the absorbents.

Emetics* have been much administered in dropsical cases, under the supposition that they greatly promote absorption, and in many instances they have certainly been attended with a very good effect. To employ them, however, with advantage, we ought to repeat them frequently. If they are found to weaken the patient, without procuring any mitigation of the disorder, we should then desist from using them.

An emetic of vitriolum cupri, as advised under the head of Phthisis, or below,† appears to be the most proper, as having less tendency to exhaust, than any other used in common.

Purgatives are likewise much employed in dropsical cases, with the view of carrying off a portion of the water by stool, and of exciting absorption; and as the stimulus of those which are of a drastic nature‡ is

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* ℞. Vini Antimonii ℥jfs.
Vel
℞. Oxymel. Scillit. ℥vj.
Vin. Ipecac. ℥fs. M.
ft. Hauſtus.
Vel
℞. Oxymel. Scillit. ℥j.
Antimon. Tartariſat. gr. j.
Aq. Menth. Sativ. ℥fs. M.
ft. Hauſtus.

† ℞. Vitriol. Cupri gr. v. ad x.
Pulv. Ipecac. gr. iv. M.
ft. Pulv. ſecundo vel tertio quoq. mane ſumendus.

‡ ℞. Scammon. gr. xij.
Calomel. gr. v.
Cryſtal. Tartar. ℥fs.
Pulv. Zingib. gr. v. M.
ft. Pulvis pro dos.
Vel
℞. Pulv. Jalapii
—— Scammon. āā xij.
—— Aromat. gr. x. M.
ft. Pulvis.
Vel
℞. Gum. Gambog. gr. iij. Terito bene cum
Tinct. Sennæ Comp. ℥fs. et adde
—— Jalapii ℥ij.
Syrup. Zingib. ℥iij. M.
ft. Hauſtus.
Vel
℞. Elaterii gr. j ad ij.
Pulv. Zingib. gr. x.
Ol. Junip. gutt. iij.
Syrup. Simp. q. s. M.
ft. Bolus.
Vel
℞. Extract. Colocynth. C. ℈j.
Elaterii gr. j.
Ol. Caryophil. gutt. ij. M.
fiant Pilul. v. pro dos.

most readily communicated to the system, so these are more generally used than those of a mild kind. Crystallized tartar is, however, a purgative of this nature, which has been given with considerable success, but it is more usual to combine it with some of the drastics, such as jalap, elaterium, scammony, and gamboge,‡ than to give it alone.§

To administer purgatives with the greatest advantage, they ought to be repeated at as short intervals as the patient can bear; for when purging is not carried to the degree of quickly exciting absorption, the evacuation weakens the system, and thereby increases the afflux of fluids to the hydropic parts.

Diaphoretics are another class of medicines which have been employed in dropsy. In a few instances, sweating may perhaps have produced a good effect; but in general, it proves inefficacious, and only tends to add to general debility. On this account, diaphoretics are not much employed in dropsical cases, particularly where there is great weakness, and general relaxation of the system. Should the practitioner wish to make trial of them under the failure of other remedies, he can administer them as here* advised, directing the patient at the same time to be laid between blankets, with a shirt and trowsers of flannel next to his skin, and to drink plentifully of tepid liquors, of which none may probably be more proper than mustard-whey.

Another method of promoting a diaphoresis, and of thereby increasing absorption from the cellular membrane, is by warm air, or by warm steam. If the swelled legs of a dropsical patient are inclosed in a box, the air of which is made warm by a lamp or two, a copious sweat is soon produced by the increased action of the capillary glands, which is seen to stand on the skin, as it cannot readily exhale in so small a quantity of air, which is only changed so fast as may be necessary to permit the lamp to burn. At the same time, the lymphatics of the cellular membrane are stimulated by the heat into greater action, as appears by the speedy reduction of the tumid legs.

Possibly it might be well worth trying an experiment upon a person labouring under a general anasarca, by putting him into a room filled with air heated to about 120 degrees, which would probably excite a copious general diaphoresis, and a universal cellular absorption, both from the lungs and every other part. That air of so great heat may be

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‡ ℞. Cryſtal. Tartar. ʒiij.
Gambog. gr. ij.
Pulv. Nuc. Moſch. gr. x. M.
ft. Pulvis.

§ ℞. Cryſtal. Tartar. ʒj.
In Chartul. iv. diſtribuend.
Capiat unam ʒtia quaq. hora.

* ℞. Pulv. Ipecac. C. gr. xij.
Conſerv. Roſæ q. s. M.
ft. Bolus tertia hora sumendus.

Vel

℞. Camphor. gr. v.
Pulv. Antimonial. gr. ij.
Confect. Aromat. gr. xij. M.
ft. Bolus.

Vel

℞. Pulv. Jacob. Ver. gr. v. pro dos.

Vel

℞. Aq. Ammon. Acetat. ʒſs.
—— Raphan. ʒj.
Vin. Antimon. gutt. xxx.
Spirit. Ammon. C. gutt. xx.
Syrup. Zingib. ʒij. M.
ft. Hauſtus.

borne for many minutes without much inconvenience, has been demonstrated by the experiments made in heated rooms by Dr. Fordyce.

Another experiment of using warmth in anasarca and other diseases, might be, by immersing the patient in warm air, or in warm steam, received into an oil-skin bag, or bathing tub of tin, so managed, that the current of warm air or steam should pass round and over the whole of the body, except the head, which might not be exposed to it; and thus the absorbents of the lungs might be induced to act more powerfully by sympathy with the skin, and not by the stimulus of heat.*

By employing stimulants, we sometimes are able to increase the action of the absorbent vessels, and thereby occasion watery fluids to be absorbed from their cavities. As such, mercury has sometimes been made use of; but it is apt to leave a great degree of weakness behind it, and to prove thereby highly prejudicial. If mercury will cure the disease on which dropsy depends, then it will be a proper remedy, but not otherwise.

The parts affected with dropsy have been stimulated by rubbing them very well every morning with warm dry flannels; and the practice is certainly productive of a very good effect. Volatile liniment, and such other stimulating applications, can only prove useful in partial dropsies.

To remove swellings of the legs proceeding from a deficient action of the absorbents of the lower extremities, a warm saline pediluvium has often been used with success. The quantity of sea-salt should be about one thirtieth part of the water, which with about one-eightieth part of vitriolated magnesia, or bitter cathartic salts, constitutes the medium strength of the sea-water round this island. In such a pediluvium, the legs should be immersed for half an hour every night for a fortnight, at the heat of about 96 or 98 degrees.

Dr. Reid, in his Treatise on Sea-bathing, recommends an universal warm bath of sea-water in œdematous swellings, and apparently has employed it with success. He advises friction at the same time to be diligently used in the bath on the tumid limbs, taking care always to rub them from their extremities towards the trunk of the body, and not in the contrary direction, as in this way the progress of the fluids in the absorbent system must be most facilitated, though these vessels are furnished with valves to prevent its return. In a warm bath of sea-water the stimulus of the salt is added to that of the heat.

The evacuation which will be attended with the least danger of inducing debility, and at the same time with the best effect, is the excretion by the kidneys; and it is on this account that diuretics are more generally employed in all cases of dropsy, than any other class of medicines. Even these often fail, however; but not unfrequently, we may presume, from their use being discontinued too soon.

Of the class of diuretics, none seems to be more active than the digitalis. Its power of increasing the discharge from the kidneys, and of

* This and the former experiment have been proposed by the late Dr. Darwin. See vol. ii. of his Zoonomia, article iv. Sorbentia.

succeeding in effecting a cure of dropsical affection, in consequence of the increased evacuation produced by it, has of late been clearly ascertained in a great variety of instances. On account of its acting powerfully on the nervous system, destroying its mobility, and weakening the vital powers by repressing arterial action, it has, however, by some practitioners, been thought an improper remedy in dropsy; but even large doses of it have been given in this disease without any of those uncontrollable and dangerous effects which are said to deter many from its use, being observed to ensue.

It is a circumstance of curious and interesting moment, not perhaps very generally known, that a relaxed, weakened, and depressed state of the system, is the most favourable for displaying the full effects of digitalis. Dr. Withering had early pointed out the fact, that in persons of tense fibres and great natural strength, labouring under ascites or anasarca, the digitalis seldom succeeded; and that, on the contrary, where the pulse was found feeble, or intermitting, the anasarcous limbs and body soft and yielding, the countenance pale, and the skin cold, the diuretic powers of the plant were more conspicuous.

It may not here be unworthy of notice, that where the foxglove is given in such doses as to excite nausea, or to produce evident narcotic effects, it does not then operate as a diuretic. In a long use of it, its narcotic effect seems to preclude its action as a diuretic. A diarrhœa supervening on the use of this remedy, is likewise found to stop its diuretic effect.

[1] If the digitalis does not answer within the first fortnight, the best way will be to change it for some other diuretic; as it not unfrequently happens that where we have failed with one remedy of this class, we shall be successful with a second or a third. No class of medicines is so uncertain in effect as this, and it will often occur that a diuretic of very inferior expectation, will procure the effect we wish, after a failure of those which rank highest in power.

In employing the foxglove in dropsy, we may give it either in infusion or saturated tincture, as mentioned under the head of Phthisis; or we may give it in substance,* washing it down with a teacupful of any diuretic infusion.

The digitalis lutea has been found by Dr. Careno, of Vienna, to possess stronger diuretic powers than the digitalis purpurea, and without producing any of the usual noxious effects. He tells us † that he has succeeded in curing many dropsies with the digitalis lutea after the other species had failed.

Crystallized tartar is another diuretic which is often employed in dropsical affections with a very happy effect. As possessing no deleterious qualities, and being easily managed by practitioners of the

† See Memoirs of the Royal Academy of Berlin for 1794—5.

* ℞. Pulv. Digital. Purp. gr. j—jß.
Confect. Aromat. gr. x. M.
ft. Bolus mane et vesp. sumendus.

smallest judgment, a preference over the digitalis has been given to it by some. Whether it possesses as great an anti-hydropic power, has not been satisfactorily ascertained. The experiments of Dr. Home* and Dr. Ferriar† seem to assure us that it does; but from my own experience I am induced to conclude that it does not.

In some cases, however, crystallized tartar diminishes the swellings very speedily. It produces an increase of urine with watery stools; and for the most part lessens the patient's size more quickly than the increase of urine would lead us to expect. When it is likely to prove successful, it usually operates very early, producing, in general, an increased flow of urine within twenty-four hours; but its salutary effects have been known to have been delayed to the end of the third or fourth week. It is given in doses of from two drachms, to one or two ounces a-day, as by habit it loses a good deal of its effect. When the quantity is considerable, it will be best to divide it into three or four doses, instead of taking it all at once, as few stomachs will bear it. In conjunction with gamboge, as before advised, it forms a powerful medicine, and, according to circumstances, may be made either to assist or take the lead of the digitalis.

From a junction of crystals of tartar with digitalis,‡ interposing purgatives occasionally, the greatest advantages might possibly be derived.

A total abstinence from drink has long been considered as highly necessary in all cases of dropsy; but in many instances the practice has been carried to a considerable length without any advantage. It seems, however, to have fallen a good deal into discredit, as large quantities of watery liquors are often now allowed, where diuretics, but more particularly the crystals of tartar are given. This mode of treatment seems indeed by far more proper than the former, as these medicines can hardly be carried in any quantity to the kidneys, without being accompanied with a large portion of water. When, upon a fair trial, the quantity of urine is not found to be increased by drinking water or other watery liquors, § their use may in that case be discontinued.

* Clinical Observations, Experiments, &c. p. 349.
† Medical Histories and Reflections.

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‡ ℞. Cryftal. Tartar. ʒij.
Pulv. Aromat. gr. v.
—— Digitalis gr. ſs.—j. M.
ft. Pulvis ter in die ſumendus.

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§ ℞. Bacc. Junip. Contus.
Rad. Raphan. Incis. āā ʒj.
Aq. Fontan. ℔ij. Coq. ad ℔j.
Col. et adde
Kali Acetat. ʒiij.
Spirit. Junip. ʒij. M.
Capiat Cyath. unum ætia vel 4ta hora.

Vel

℞. Semin. Lini ʒj.
—— Sinap. ʒſs.
Aq. Fervent. ℔ij. Poſt horas xij.
Col. et adde
Kali Nit. ʒij.
Spirit. Raph. ʒij. M.

Vel

℞. Rad. Raphan. Incis.
Sem. Sinap. C. āā ʒſs.
Aq. Bullient. ℔j.
Infund. per horas xij. et adde Liquori colat.
Kal. Præparat. ʒiij.
Spirit. Junip. ʒij. M. *Vel*

The different preparations of squill * have been used very much in dropsical cases; but although this medicine has sometimes been attended with a good effect, still the advantages to be derived from it are by no means so certain as those we usually obtain from the digitalis or crystals of tartar. A combination of squill and calomel has been tried, but it has not been found to diminish the swellings in proportion to its diuretic effect.

The spiritus ætheris nitrosi † is another diuretic, and may be had recourse to when other medicines of this class fail.

A decoction of green broom, drank in large quantities, is also a diuretic of considerable powers, particularly in anasarcous cases. It may therefore be used with other remedies, as has already been advised.

Bacher's pills ‡ (which consist principally of hellebore,) are among the diuretics often employed in dropsy. Whenever they produce a discharge of water, they diminish the swellings; but in cases of long standing they evidently weaken the patient, however cautiously given.

The tobacco tincture § is another remedy which has in some instances

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Vel

℞. Bacc. Junip. Cont. ℥ij.
Cryſtal. Tartar. ℥ſs.
Aq. Diſtillat. ℔iv. Decoq. ad ℔ij.
et Liquor. colat. adde
Spirit. Raph. C. ℥ij.
Libra una bibatur quotidie.

Vel

℞. Ciner. Geniſtæ ℥ij.
Bacc. Junip. Cont.
Sem. Sinap. Cont. āā ℥j.
Kal. Acetat. ʒiij.
Infund. in Vin. Rhen. ℔iv. per horas xxx. Col. et ſumat Cochl. iij. ter quaterve die.

Vel

℞. Nitri Purificat. ℈ij.
Aq. Fervent. ℥xij.
Spirit. Junip. C. ℥jſs.
Syrup. Cort. Aurant. ℥j. M.
Cap. Cyath. j. 4ta vel 6ta quaq. hora.

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* ℞. Oxymel. Scillæ ʒij.
Confect. Aromat. ℈j.
Aq. Nuc. Moſch. ℥jſs.
Spirit. Junip. C. ʒiij. M.
ft. Hauſtus bis vel ter in die ſumendus.

Vel

℞. Kal. Acetat. ʒſs.
Acet. Scillæ ʒjſs.
Aq. Fœnicul. ℥j.
Spirit. Raph. C. ʒij.
Tinct. Lav. C. ʒſs. M.
ft. Hauſtus.

Vel

℞. Pulv. Scillæ gr. ij.
—— Aromat.
—— Nitr. Purif. āā gr. viij.
Syrup. Zingib. q. s. M.
ft. Bolus ter in die capiendus.

Vel

℞. Scillæ Exſiccat. Pulv. gr. ij.
Pulv. Zingib. gr. x.
Ol. Junip. gutt. v.
Conſerv. Aurant. q. s. M.
ft. Bolus.

Vel

℞. Pulv. Scillæ gr. iij.
Cryſtal. Tartar. ʒij.
Sacch. Alb. Pulv. ʒj. M.
ft. Pulvis mane et veſp. ſumendus.

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† ℞. Aq. Ammon. Acetat. ℥ſs.
—— Raphan. ℥j.
Spirit. Æther. Nitroſi ʒjſs.
Tinct. Lav. C. ʒſs.
Syrup. Zingib. ℥ij. M.
ft. Hauſtus ter in die capiendus.

Vel

℞. Decoct. Hordei ℥jſs.
Spirit. Junip. C. ʒij.
—— Æther. Nitr. ʒj.
Oxymel. Scill. ʒij. M.
ft. Hauſtus.

Vel

℞. Fol. Digital. Purp. ℥ij.
Aq. Bullient. ℔ſs. Poſt horas duas
Cola, et adde
Spirit. Ætheris Nitroſi ℥j. M.
Capiat Cochl. larg. ij. 4tis horis.

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‡ ℞. Extract. Helleb. Nigr.
Myrrh. Solut. āā ℥ſs.
Pulv. Card. Benedict. ʒjſs. M.
ft. Massa in Pilul. ſingul. gr. 1½ diſtribuend. quarum. ſumat. v. pro dos. 6ta quaq. hora.

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§ ℞. Fol. Nicotian. ℥ſs.
Aq. Bullient. ℥vj.
Spirit. Vin. ℥j. M.
Capiat gutt. lx. ad cxx. pro dos.

proved highly diuretic, when others have failed. Its use has been recommended by Dr. Fowler of York. Various other medicines† are to be included in the list of diuretics, which may be resorted to in cases of need.

Cantharides will be likely to prove a useful and powerful remedy of this class, because they debilitate neither the general system, nor the parts upon which they immediately act. In the dropsical complaints of elderly people, with whom their stimulating power is not likely to be so active as with those who are young, they are particularly indicated.

Turpentine ‡ is another stimulating diuretic which has been employed by some practitioners with much success when other remedies of a milder nature have failed. If we give the oleum terebinthinæ, we had better begin with about six drops, which dose may be repeated three or four times in a day. The quantity is to be gradually increased according to the state of the patient, and the effect produced.

The third indication which has been proposed for the cure of anasarca, is to strengthen the system. When the disease is in its incipient state, and perfectly recent, we may often be able to arrest its progress, by employing, at an early period, proper means for effecting this purpose: but when it has been of long standing, we shall in general be obliged to wait until the water has been evacuated by the means which have been proposed.

The tonic remedies best adapted for strengthening the system, have already been fully noticed under the head of Dyspepsia. These therefore, when proper, must be had recourse to, together with moderate daily exercise, frictions every morning with warm flannels, and supporting the integuments of the lower extremities, either by bandages or a laced stocking. If a preference is given to bandages, great care should be taken, in applying them, not to make a greater compression on the upper part of the limb, than on the lower.

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† ℞. Confect. Aromat. ℥j.
Aq. Pimento ℥jfs.
—— Kali gutt. xxx. ad ℥j.
Spirit. Junip. ℥ij. M.
ft. Hauſtus ter die sumendus.

Vel

℞. Aq. Fœnicul. ℥jfs.
Tinct. Cantharid. gutt. xx.
Spirit. Æther. Nitr. ℥ſs.
Syr. Cort. Aurant. ℥ij. M.
ft. Hauſtus.

Vel

℞. Millep. Præparat. ℥ij.
Sapon. Venet. ℥ſs.
Gum. Ammon. ℥ij.
Ol. Junip. gutt. xv.
Syrup. q. s. M.
Fiant Pilul. x. e ſing. drachma, quarum ſumat v. ter die, ſuperbib. Cyath. Infus. Bacc. Juniperi.

‡ ℞. Pulv. Sem. Sinap. ℥j.
Spirit. Terebinth. gutt. vj. ad xij.
Syrup. Simpl. q. s. M.
ft. Bolus ter quaterve die ſumendus cum Cochl. largis iv. Infusi Cinerum Geniſtæ.

Vel

℞. Terebinth. Venet. (in Vitell. Ovi solut.) ℥ſs.
Extract. Aloes gr. x.
Pulv. Cinchonæ ℥ij. M.
Fiant Pilulæ ana gr. iij. quarum æger ſumat tres ter in die.

In some cases of dropsy, but more particularly in those where general debility has occasioned the disease, it may be proper to join diuretics to tonics, as in the manner here * advised, and this plan we may adopt from the commencement of the disease, keeping the body open at the same time with some gentle aperient.

It not unfrequently happens that an erysipelatous inflammation which shews a tendency to gangrene, arises on anasarcous legs. Linen rags moistened in a strong solution of cerussa acetata in water, in the proportion of two drachms of the former to half a pint of the latter, will be a good application in all such cases, even in preference to the bark, in the form either of fomentations or poultices. In the inflammatory affection of the lower extremities, accompanying anasarca, Dr. Ferriar found much advantage from an infusion of digitalis used as a lotion.

The diet in all anasarcous cases ought to be light and nourishing, con-

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* ℞. Infus. Gentian. C. ℥j.
Tinct. Cort. Peruv. C. ʒiij.
—— Cantharid. gutt. xv. M.
ft. Hauſtus ter die ſumendus.

Vel

℞. Pulv. Myrrh. ʒſs. Solv. in
Aq. Pimento ℥jſs. et adde
Spirit. Junip. C. ʒij.
Ferri Vitriolat. gr. v.
Kali Præparat. gr. x.
Tinct. Digital. Purp. gutt. xv. M.
ft. Hauſtus.

Vel

℞. Infus. Cort. Angustur. ℥jſs.
Tinct. Columb. ʒij.
Kali Acetat. ʒſs.
Spirit. Raphan. ℥j. M.
ft. Hauſtus.

Vel

℞. Infus. Digitalis ʒvj.
Tinct. Card. C.
Spirit. Junip. āā ʒij. M.
ft. Hauſtus ter in die capiendus.

Vel

℞. Infus. Quaſſiæ ℥jſs.
Tinct. Cardam. C. ʒij.
—— Digital. Purp. gutt. xv.—xx. M.
ft. Hauſtus.

Vel

℞. Gum. Myrrh. Pulv. ℥j.
Ferri Vitriolat. ℈j.
Kal. Acetat. ℈ij.
Aq. Menth. ℥vj.
Tinct. Scillæ
Spirit. Æther. Nitr. āā. ʒjſs. M.
ft. Miſtura cujus ſumat Cochl. larg. iij. 4tis horis.

Vel

℞. Pulv. Aromat. gr. x.
—— Gentian. gr. xv.
—— Digital. gr. j. M.
ft. Pulv. mane et veſper. ſumendus.

Vel

℞. Pulv. Columb.
—— Zingib. āā gr. x.
Cryſtal. Tartar. ʒij. M.
ft. Pulv. ter die capiendus.

Vel

℞. Pulv. Zingib.
—— Aromat. āā ʒij.
—— Myrrh.
Ferri Vitriolat. āā ℥j.
Kal. Præparat. ʒſs.
Ol. Junip. gutt. x.
Syrup. Aurant. q. s. M.
ft. Maſſa in Pil. cx. diſtribuenda, quarum ſumat iv. ter in die cum Cyath. Infuſi Geniſtæ.

Vel

℞. Extract. Cinchon.
—— Gentian. āā ℥j.
Ferri Vitriolat. ʒſs.
Kal. Præparat. gr. xv.
Syrup. Zingib. q. s. M.
ft. Pilul. xxxvj. Capiat iij. vel iv. ter die cum Cyath. j.
Decoct. Bacc. Juniperi.

sisting chiefly of meats which are of easy digestion, and pungent aromatic vegetables, as garlic, mustard, onions, cresses, horse-radish, shalot, &c. For common drink, the patient may use any of the diuretic infusions before recommended. If wine is wished for, Rhenish will be most proper. If he lives in a damp situation, he ought to be removed into a dry one, and, if possible, into a warmer climate.

Of a DROPSY of the BELLY, or ASCITES.

THIS disease is marked by a tense swelling of the abdomen, accompanied by an evident fluctuation.

The water is usually collected in the sac of the peritonæum, or general cavity of the abdomen; but sometimes it is found entirely without the peritonæum, and between this and the abdominal muscles. Collections of water, in some instances, begin by sacs formed upon and connected with one or other of the viscera, as happens frequently in the ovaria of women. These form that disease which has been termed encysted dropsy. Hydatids have been supposed to give rise to them.

An obstruction in the liver, or in some of the other viscera of the abdomen, is the most frequent cause of this species of dropsy; but it may, however, be occasioned by any of the causes which have been mentioned as being productive of anasarca.

Ascites is often preceded by loss of appetite, sluggishness, inactivity, dryness of the skin, oppression at the chest, cough, diminution of the natural discharge of urine, and costiveness. Shortly after the appearance of these symptoms, a protuberance is perceived in the hypogastrium, which extends gradually, and keeps on increasing, until the whole abdomen becomes at length uniformly swelled and tense.

The distention and sense of weight, although considerable, vary somewhat according to the posture of the body, the weight being felt the most in that side on which the patient lies, while at the same time the distention becomes somewhat less on the opposite one. In general, the practitioner may be sensible of the fluctuation of the water, by applying his left hand on one side of the abdomen, and then striking on the other with his right. In some cases it will be obvious to the ear.

As the collection of water becomes more considerable, the difficulty of breathing is much increased, the countenance exhibits a pale or bloated appearance, an immoderate thirst arises, the skin is dry and parched, and the urine is very scanty, thick, high-coloured, and deposits a lateritious sediment. With respect to the pulse, it is variable, being sometimes considerably quickened, and at other times slower than natural.

The principal difficulty which prevails in ascites, is the being able to distinguish with certainty when the water is in the cavity of the abdomen, or when it is in the different states of encysted dropsy. To form a just judgment, we should attend to the following circumstances:

When the preceding symptoms give suspicion of a general hydropic diathesis; when at the same time some degree of dropsy appears in other

parts of the body; and when, from its first appearance, the swelling has been equally diffused over the whole belly, we may generally presume that the water is in the cavity of the abdomen. But when an ascites has not been preceded by any remarkable cachectic state of the system, and when, at its beginning, the tumour and tension had appeared in one part of the belly more than another, there is reason to suspect an encysted dropsy. Even when the tension and tumour of the belly have become general, yet if the system or body in general appear to be little affected; if the patient's strength be not much impaired; if the appetite continue pretty entire, and the natural sleep be little interrupted; if the menses in females continue to flow as usual; if there be yet no anasarca, or, though it may have already taken place, if it be still confined to the lower extremities, and there be no leucophlegmatic paleness or sallow colour in the countenance; if there be no fever, nor so much thirst or scarcity of urine, as occur in a more general affection; then according as more of these different circumstances take place, there will be the stronger grounds for supposing the disease to be of the encysted kind.†

Ascites is always to be considered as of very difficult cure, let the cause have been what it may; but when it has taken place in consequence of a scirrhosity of the liver, or other considerable affections of the abdominal viscera, all that we can promise is, to afford, perhaps, a temporary relief by the operation of the paracentesis. When dropsy is of the encysted kind, it generally terminates sooner or later in the destruction of the patient.

The usual appearances to be observed in dissections of those who have died of ascites, are scirrhosities in the liver, spleen, and mesenteric glands. In some few cases, the pancreas has likewise been found in a similar state, but this does not often happen.

Polypi are not unfrequently found in the large blood-vessels, as well as ossifications in various parts of these organs. The consistence of the blood itself is more or less altered according to the degree of the disease, and the intensity of its causes. The effused fluid is for the most part serous, notwithstanding it frequently presents material differences both in colour and consistence, as well as in the acrimony of its quality. In some cases, the water, instead of being collected in the general cavity of the abdomen, in one large body, is lodged in distinct small cysts or hydatids.

In the treatment of ascites we are to attend to the two following indications:

1st, To evacuate the accumulated fluid; and,

2dly, To prevent any fresh collection.

To answer the first of these intentions, it has been customary to have recourse to purgatives of a drastic nature, or to diuretics, with

† These remarks are taken from Dr. Cullen's First Lines of the Practice of Physic, as conveying a clear idea of the distinguishing marks between ascites and encysted dropsy.

the occasional use of emetics, in the same manner as has been fully noticed under the head of Anasarca, and to which I must beg leave to refer the reader, in order to save the trouble of recapitulation.

Before we have recourse to the paracentesis, we should give a fair trial to each of these classes of medicine; and if any particular diuretic does not succeed in promoting the wished-for discharge by urine, we ought, after a proper time, to change it for some other, in the same manner as has been advised in anasarca.

A singular method which has been recommended for procuring a discharge by urine in ascites, is by long-continued gentle friction of the abdomen with the fingers dipped in oil; which operation is to be repeated daily. The only effect to be derived from the oil appears to be that of preventing an excoriation of the skin.

If all means fail, and the pressure and tension of the abdomen become insupportable, or if we have reason to suspect the pressure of the water upon the kidneys prevents the diuretics from having a due effect on them, we must then resort to tapping. This mode of evacuating the water is undoubtedly the most ready, but it has no disposition to eradicate the disease. The operation is considered by some as not being likely to be attended with injurious consequences, and is by a few practitioners advised as the first step to be pursued; but as erysipelatous inflammation, terminating in gangrene, has not unfrequently arisen in the wound, it would seem best to make trial of other means, before we have recourse to it. In drawing off the water, a proper degree of pressure should be made on the abdomen by means of a broad bandage, and this ought to be kept up for some time.

By giving a smart purgative the day after the performance of the operation, and repeating it two or three times, with an interval of a few days between each dose, I have, in a few instances, prevented any fresh accumulation of the water, and in a great many, very much retarded it.

When ascites is combined with anasarca, and has arisen from general debility, we should always, after tapping, employ tonics combined with diuretics, as advised under the latter head, together with frictions and exercise.

It has been mentioned, that partial dropsy often takes place. Collections of water of this nature, sometimes occupy the ovaria in women, and the womb itself is not unfrequently distended with water in a similar way.

Sometimes hydatids form in the cavity of the abdomen. These to appearance consist of membranous bags, the coats of which are so thin as to be semi-transparent, and to have no visible muscular structure. From the effects produced by the different parts of these bags, while the animal is alive, being exactly similar to the contractions and relaxations of the muscular fibres in the human body, we have great reason to conclude, however, that these membranes are possessed of a similar power.

The hydatid, from its apparent want of muscles, and other parts

which generally constitute an animal, was for a long time denied its place in the animal world, and considered as merely the production of disease; we are, however, at present in possession of a sufficient number of facts to ascertain, not only that it is an animal, but that it belongs to a genus of which there are different species.

Encysted dropsy of every kind is to be treated in the same manner as ascites, however unsuccessful our endeavours may be likely to prove.

In hydrocele, the point we wish to obtain is, the obliteration of the cavity of the tunica vaginalis. To effect this, various methods have been proposed, such as excision, incision, seton, tent, caustic, and the injecting of vinous or other liquors, having previously discharged the water by a trocar.

This last method of treating the disease has been of late particularly recommended by Sir James Earle. It is however by no means a modern invention, as we find it advised by Monsieur Lambert in his Œuvres Chirurgicales, published near a century ago at Marseilles. He used a strong solution of muriated mercury in lime-water, and enumerates many cases in which it proved successful. We are informed by Mr. Bell,† that in Scotland, spirits of wine, some time after this, were employed for the same purpose, but that the violent pain and inflammation which these excited, soon occasioned their being laid aside.

The injection employed by Sir James Earle is red wine, diluted with a fourth or fifth part of water. Notwithstanding what he has asserted on the subject, Mr. Bell affirms, that it is not near so certain a remedy as either of the other ways, and that the pain which is saved in the operation, is not worth consideration, when put in competition with the certainty of a cure. Besides the uncertainty of this, he enumerates the following objections: The inflammation may sometimes arise to such a height as to produce suppuration within the cavity; when this happens, besides the pain and risk attending the inflammation, an incision equally extensive for discharging the matter, will be necessary, as if the mode of cure by incision had been adopted at first. It does not admit of an examination of the testis with accuracy. The strength of the injection necessary for producing inflammation of the tunica vaginalis may be more than the testis can bear.

Under such a diversity of opinion, experience alone can determine at last in favour of one or other of the methods proposed, simple incision being that recommended by Mr. Bell.

Of WATER in the HEAD, or HYDROCEPHALUS.

PYREXIA, pain in the head, particularly across the brow, stupor, dilatation of the pupils, nausea, vomiting, preternatural slowness of the pulse, and convulsions, are the pathognomic symptoms of this disease, which have been laid down by the generality of writers. One of the

† See his Treatise on Hydrocele, and other Diseases of the Testis.

earliest criterions is the patient being uneasy on raising his head from the pillow, and wishing to lie down again immediately.

Hydrocephalus is almost peculiar to children, being rarely known to extend beyond the age of twelve or fourteen, and it seems more frequently to arise in those of a scrofulous and ricketty habit than in others, or at least among those having the peculiarities of skin, complexion, and features, which indicate scrofula. It is an affection which has been observed to pervade families, affecting all or the greater part of the children at a certain period of their life; which seems to shew, that in many cases it depends more on the general habit, than on any local affection or accidental cause.

It is to be distinguished from apoplexy by its being attended with fever, and from simple typhus, by the paroxysms being very irregular, with perfect intermissions, many times in a day. Whatever difficulties there may be in the early stage, particularly in infants, there is no disease more easily distinguished in the more advanced stages than hydrocephalus; indeed, how can we mistake, when we see a child rolling its head on the pillow, or perhaps sawing the air with one hand, while the opposite side is palsied; with a hectic on the cheek, his eyelids half concealing the pupil, and the eye deprived of its vivacity by the filmy covering of the cornea; the complete dilatation of one or both pupils, and the suffusion of the adnata; drawing a long sigh; frequently grinding his teeth; quite incoherent, or in a state of complete insensibility; with a burning fever on his skin, or sweat forced from every pore, and all these symptoms alternating with, and at last finished by a palpitating breathing, and violent convulsions?*

The disease has generally been supposed to arise in consequence either of an immediate affection of the sensorium, from some general disease, as fever, or of injuries done to the brain itself, by blows, falls, &c.; from scirrhous tumours or excrescences within the skull; from original laxity or weakness in the brain, or from the brain morbidly sympathizing with a distant part. There is, however, reason to believe, that the disease, in by far the greater number of cases, owes its origin to a degree of inflammation, which produces a morbid accumulation of blood, and generally an extravasation of watery fluid before death.

With respect to its proximate cause, very opposite opinions are still entertained by medical writers, which, in conjunction with the equivocal nature of its symptoms, prove a source of considerable embarrassment to the young practitioner.

Dr. Beddoes says he believes it to belong to inflammations, and that at an early period he should be inclined to bleed as largely as in pneumonia.

Dr. Withering observes, that in a great many cases, if not in all, congestion or slight inflammation are the precursors to the aqueous accumulation.

Dr. Rush thinks, that, instead of its being considered an idiopathic

* See Essay on Hydrocephalus Acutus, by J. Cheyne, M. D.

dropsy, it should be regarded only as an effect of a primary inflammation, or congestion of blood in the brain. It appears (he says) that the disease in its first stage is the effect of causes which produce a less degree of that inflammation which constitutes phrenitis; and that its second stage is a less degree of that effusion which produces serous apoplexy in adults. The former partakes of the nature of the chronic inflammation of Dr. Cullen, and the asthenic inflammation of Dr. Brown.

There are others again who view the subject in a very different light. Dr. Darwin supposes inactivity or torpor of the absorbent vessels of the brain to be the cause of hydrocephalus internus; but he confesses, in another part of his work, that the torpor of the absorbent vessels may often exist as a secondary effect.

Dr. Whytt, who has published an ingenious treatise on the disease, observes, the immediate cause of every kind of dropsy is the same; viz. such a state of the parts as makes the exhalant arteries throw out a greater quantity of fluids than the absorbents can take up. From what he afterwards mentions, he evidently considers this state as consisting in debility.

As many cases are accompanied with an increased or inflammatory action of the vessels of the brain, and others again are observed to prevail along with general anasarca, it seems rational to allow that hydrocephalus is, in some instances, the consequence of congestion or slight inflammation in the brain; and that in others it arises either from general debility or topical laxity. In admitting these as incontrovertible facts, I am at the same time induced to suppose that the cases of its occurring from mere debility are very rare.

The great analogy subsisting between the symptoms which are characteristic of inflammation, and those which form the first stage of the acute species of hydrocephalus (for the disease has been divided into the chronic and acute by some writers,) together with the good effects often consequent on blood-letting, and the inflammatory appearance which the blood frequently exhibits, seem to point out strong proofs of the disease being in most instances an active inflammation, and that it rarely occurs from mere debility, as a primary cause.

The progress of the disorder has by some been divided into three stages.

When it is accompanied by an increased or inflammatory action of the brain, its first stage is marked with many of the symptoms of pyrexia, such as languor, inactivity, loss of appetite, nausea, vomiting, parched tongue, hot dry skin, flushing of the face, head-ach, throbbing of the temporal arteries, quickened pulse, aversion to light and sounds, and watching; which symptoms always suffer an exacerbation in the evening, but towards morning become milder.

When it is unaccompanied by an inflammatory action of the brain, many of these appearances are not to be observed. In these cases, it is marked by a dejection of countenance, loss of appetite, pains over the eyes, soreness of the integuments of the cranium to the touch, propensity to the bed and a recumbent position, aversion to being moved,

nausea, and costiveness. The disease at length makes a remarkable transition which denotes the commencement of its second stage. The child screams out without being able to assign any cause; its sleep is much disturbed; there is a considerable dilatation of the pupils of the eyes, without any contraction on their being exposed to light; lethargic torpor, or perhaps double vision, ensues, the pulse becomes slow and unequal, and very often the belly is obstinately costive.

In the third stage, the pulse returns again to the febrile state, becoming uncommonly quick and variable, and coma, with squinting and convulsions, succeed. When the accumulation of water is very great, and the child young, the sutures recede a considerable way from each other, and the head, towards the end, becomes much enlarged.

We are not, however, to expect, that these stages will follow each other in all cases in a regular and increased progress; for a child has sometimes appeared in health on the very night on which it was seized with convulsions by which it was destroyed in a few days afterwards.

The disease commonly terminates in three weeks from the date of the first symptom; but in some instances, its termination is extended to four, five, or six weeks. Like every disease of the brain, its duration is, however, uncertain, for in some cases it has run its course in a few days.

When recoveries have actually taken place in hydrocephalus, we ought probably to attribute more to the efforts of nature than to the interference of art. In every instance it is to be regarded as of difficult cure, but the chance of this is nearly in proportion to the duration of the symptoms.

When the patient cannot bear to be raised up in bed without great uneasiness, it is a bad symptom. So is deafness, which there is reason to believe is now and then mistaken for stupor. When the dilatation of the pupil of either eye, or squinting, is very apparent, or the pupils of both eyes are much dilated, a fatal termination is denoted.

An accumulation of water in the ventricles of the brain is one of the most common appearances to be observed on dissection. In different cases this is accumulated in greater or less quantities. It sometimes amounts only to a few ounces, and occasionally to some pints. When the quantity of water is considerable, the fornix is raised at its anterior extremity, in consequence of its accumulation, and an immediate opening or communication is thereby formed between the lateral ventricles. The water is of a purer colour and more limpid than what is found in the dropsy of the thorax or abdomen. It appears, however, to be generally of the same nature with the water that is accumulated in these cavities. In some instances, the water in hydrocephalus contains a very small proportion of coagulable matter, and in others it is entirely free from it.

When the water is accumulated to a very large quantity in the ventricles, the substance of the brain appears to be a sort of pulpy bag, containing a fluid. The scull, upon such occasions, is very much enlarged in size, and altered in its shape, and it appears exceedingly large in proportion to the face. On removing the scalp, the bones are

found to be very thin, and there are frequently broad spots of membrane in them. These appearances are, however, only to be observed where the disease has been of some years continuance.

In some cases, where the quantity of water collected is not great, the substance of the brain has appeared to be indurated, and in others softened. At times the organ has been found gorged with blood; collections also of a viscid tenacious matter have been discovered in cysts upon its external surface, and tumours have been found attached to its substance.

Dr. Rowley is of opinion, that there exists a species of hydrocephalus where the water is collected between the tunica arachnoides and the pia mater, without any effusion in the ventricles of the brain: * but no such morbid appearances have ever, I believe, been discovered on dissection.

The treatment to be adopted in the first stage of this disease should vary according to the symptoms which are present. If it is marked by an increased or inflammatory action of the vessels of the brain, we should by all means recommend bleeding, but more particularly from the neighbourhood of the part, and this at the first onset of the disease; for when our fears as to the real nature of the complaint are awakened, not a minute should be lost in prescribing the remedies from which benefit is to be expected. The necessity of blood-letting in such cases seems very obvious, and it ought to be carried to such an extent as to answer a determinate end; viz. that of lessening topical congestion, and diminishing arterial action. Opening the temporal artery or jugular vein, will be the most advisable way of drawing off blood in these cases; but where this cannot be done, we must have recourse to the application of three, four, or more leeches to each temple.

The repetition of both general and topical bleeding should depend on the appearance the disease exhibits; and as long as it is marked by an inflammatory action in the vessels of the brain, or shews symptoms of local congestion, these operations may be repeated from time to time.

When the disease seems to have arisen from topical weakness or general debility (which, as before observed, does not often happen,) and is of course unaccompanied by any febrile symptoms, or when it has arisen from family constitution, or is advanced into its third stage, bleeding would be improper.

Purgatives, by lessening the determination to the head, will be necessary where the symptoms point out an increased or inflammatory action in the vessels of the brain. They will likewise be proper, where there is foulness of the bowels, indicated by the stools being either fetid and clay-coloured, or dark and slimy. Jalap combined with calomel, or crystals of tartar with gamboge, as advised under the head of Anasarca, may be taken in doses proportionate to the age of the child, and be repeated occasionally in the advanced stages.

In every stage of the disease, and let the cause have been what it may, blisters appear to be highly advisable, from the great discharge which

* See his Treatise on the membranous Dropsy of the Brain.

they occasion from the vessels of the head; and with this view, large ones may be applied round the head to the forehead, occiput, and sides of the head in succession. Of late it has been recommended to apply them in the course of the sutures, and to keep up a discharge by means of an issue; but as the unguentum cantharidis is capable of exciting a proper discharging surface, it appears preferable, its application being much less troublesome than that of an issue.

The unguentum sabinæ is now and then employed for the purpose of keeping up a proper irritation. Some recommend the blistered parts to be dressed with mercurial ointment.

Where much thirst with universal heat prevails, we may give small doses of antimonials, as advised under the head of Simple Fever, together with refrigerants, and the saline medicine.

Cold applications to the head, such as linen cloths wetted in vinegar and water, and renewed as often as they become warm and dry, have been recommended by some practitioners. That they may not interfere with blistering, we ought, in having recourse to them, to apply them always to the temples.

To occasion a re-absorption of the effused fluid, it has been long customary, with many practitioners, to employ mercury either in the form of calomel, given in small doses, or in unction applied as near as possible to the seat of the disease. At one time, mercury was indeed looked upon as a specific in hydrocephalus; and some cases of it which occurred in the practice of Dr. Percival and Dr. Dobson, are said to have been cured by it; later experience has, however, shewn that it more frequently fails than succeeds. From my own practical knowledge I am induced to conclude, that, when employed without the assistance of other remedies, it produces very rarely a good effect.

Drastic purges, such as a combination of calomel and jalap, in doses proportioned to the age of the child, and repeated every second or third day, seem to promise a much fairer chance for success, than mercury given so as to excite what is called a mercurial action in the system.

Calomel combined with the pulvis antimonialis, is a medicine which is reported * to have been employed with much advantage, in several desperate cases of this disease.

The foxglove has been suggested as a remedy in hydrocephalus; but it has not yet received the sanction of experience. To what particular state of the disease it may be adapted, whether it might relieve by diminishing arterial action, or by its power as a diuretic, on the same principle that it succeeds in the cure of dropsy, is uncertain, and only to be ascertained by further trials and observation. Its exhibition in any of the forms advised under the heads of Phthisis and Anasarca, with the external application of about half a drachm of the unguentum hydrargyr. fort. might probably be attended with good effects, when either remedy given separately might fail.

The best way of administering it will be, to begin with a moderate dose,

* See Dublin Medical and Physical Essays, Article, 1st Number.

(eight or ten drops of the saturated tincture,) and to every succeeding dose, which may be given at an interval of six hours, an addition of two or three drops may be made, so that in a day or two the system will be affected. We should proceed with caution, ascertaining, while augmenting it, the effect of the medicine after each increased dose.

A discharge from the nose ought at the same time to be promoted, by causing the patient to snuff up the powder of asarabacca, white hellebore, or the like.†

Slight electric shocks passed through the head, twice a day, have been found useful in some cases which were thought to depend on debility.

It has been proposed as a query, whether frequent vomiting might not be likely in hydrocephalus, as well as in anasarca and ascites, to act powerfully in promoting the absorption? In all cases of encysted dropsy I should apprehend that but little advantage was likely to be derived from the action of emetics, but more particularly in that of the head.

After the declination of the disease, every mean of supporting the child's strength is to be embraced, which is to be done by soups, animal jellies, and even wine, together with pure air and proper exercise.

Of the DROPSY of the CHEST, or HYDRO-THORAX.

DIFFICULTY of breathing, particularly when in an horizontal posture, sudden startings from sleep, with anxiety, and palpitations at the heart, irregularity of the pulse, cough, paleness of visage, anasarcous swellings of the lower extremities, thirst, and a scarcity of urine, are the characteristic symptoms of hydro-thorax; but the one which is more decisive than all the rest, is a fluctuation of water being perceived in the chest, either by the patient himself or his medical attendant, on certain motions of the body.

The diseases with which hydro-thorax is most likely to be confounded are, angina pectoris, asthma, and organic affections of the heart, or of the large vessels connected with it; but by a close attention to the symptoms which have been pointed out under these heads, we shall be able to distinguish between them with tolerable accuracy.

The causes which give rise to the disease are pretty much the same with those which are productive of the other species of dropsy. In some cases it exists without any other kind of dropsical affection being present, but it prevails very often as a part of more universal dropsy.

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† ℞. Folior. Exficcat. Afari
—— —— Majoranæ
—— —— Mari Syriaci
Florum Exficcat. Lavend. āā ℥ss.
Simul in pulverem tere. Fiat Pulv. Sternutatorius.

Vel

℞. Hydrargyr. Vitriolat. gr. j.
Pulv. Sacchar. Alb. gr. x. M.

Hydro-thorax is frequently a disease of advanced life, and, like other dropsical affections, it often succeeds debility, however induced. It chiefly attacks males who have addicted themselves to free living, especially to spirituous potations. Such as have long suffered from gout and asthma, are peculiarly liable to it.

It frequently takes place to a considerable degree before it becomes very perceptible; and its presence is not readily known, the symptoms, like those of hydrocephalus, not being always very distinct. In some instances the water is collected in both sacs of the pleura, but at other times it is only in one. Sometimes it is lodged in the pericardium alone; but for the most part it only appears there when at the same time a collection is present in one or both cavities of the thorax. Sometimes the water is effused in the cellular texture of the lungs, without any being deposited in the cavity of the thorax. In a few cases the water that is collected is enveloped in small cysts of a membranous nature, known by the name of hydatids, which seem to float in the cavity; but more frequently they are connected with, and attached to particular parts of the internal surface of the pleura.

Hydro-thorax often comes on with a sense of uneasiness at the lower end of the sternum, accompanied by a difficulty of breathing, which is much increased by any exertion, and which is always most considerable during night, when the body is in an horizontal posture. Along with these symptoms there is a cough, that is at first dry, but which, after a time, is attended with an expectoration of thin mucus. There is likewise a paleness of the complexion, and an anasarcous swelling of the feet and legs, together with a considerable degree of thirst, and a diminished flow of urine; occasionally the face swells, and pits upon pressure, especially in the morning, and these signs of disease are accompanied by debility and loss of flesh. Under these appearances, we have just grounds to suspect that there is a collection of water in the chest. The symptoms which have been described, gradually increase, but their progress is slow, and a considerable time elapses before the disorder is fully formed.

The difficulty of breathing at length becomes excessive. The patient can seldom remain in a recumbent posture for any time, and the head and upper part of the trunk must be supported almost erect. The sleep is frequently interrupted on a sudden by alarming dreams, out of which the patient quickly starts up in bed, with a sense of impending suffocation. Convulsive efforts of the muscles subservient to respiration, resembling an attack of spasmodic asthma, with violent palpitations of the heart, generally accompany the paroxysms, which are also frequently excited by the most trifling voluntary motion, or by a fit of coughing.

When afflicted with these distressing symptoms, the patient is under the necessity of continuing erect, with his mouth open, and he betrays the utmost anxiety for fresh air. His face and extremities are cold; the pulse, with little exception, is feeble, irregular, and intermits in a degree seldom experienced in other disorders, and a pain, or sensation of numbness, extends itself from the heart, towards the insertion of the

deltoid muscle of one or both arms. Excepting a livid hue of the lips and cheeks, the countenance is pale, and indicates a peculiar anxiety and ghastliness of appearance, and together with the upper parts of the body is usually covered with a profuse clammy sweat. Drowsiness, coma, or delirium, occasioned by the difficult transmission of the blood through the lungs, and want of sleep, frequently attend the latter periods of hydro-thorax, and from the same cause the expectoration is sometimes bloody. Now and then the fluctuation can be distinctly felt by the patient, or perceived by his attendants on a sudden change of posture.

Our prognostic in hydro-thorax, must in general be unfavourable, as it has not been often cured, and in many cases will hardly admit even of alleviation, the difficulty of breathing continuing to increase, until the action of the lungs is at last entirely impeded by the quantity of water deposited in the chest. In some cases, the event is suddenly fatal, but in others it is preceded, for a few days previous to death, by a spitting of blood. Now and then hydro-thorax ends in general dropsy, by which it is indeed sometimes accompanied from the beginning. But it more commonly impedes the action of the heart or lungs before universal dropsy has taken place, and destroys the patient by an apparent fainting fit, or by suffocation.

Dissections of this disease shew that in some cases the water is either collected in one side of the thorax, or that there are hydatids formed in some particular part of it; but they more frequently discover water in both sides of the chest, accompanied by a collection in the cellular texture, and principal cavities of the body. The fluid is usually of a yellowish colour, possesses properties similar to serum, and, with respect to its quantity, varies very much, being from a few ounces to several quarts. According to the quantity, so are the lungs compressed by it; and where it is very considerable, they are usually found much reduced in size. When universal anasarca has preceded the collection in the chest, it is no uncommon occurrence to find some of the abdominal viscera in a scirrhous state.

The treatment of hydro-thorax is to be conducted on the same general plan with that of anasarca; viz. by emetics, purgatives, and diuretics. With respect to the two former, they do not seem however so well calculated to afford relief as the last class of medicines.

Where general debility attends on the disease, or seems to have given rise to it, we may administer tonics and diuretics combined together as here* recommended, or as advised in the treatment of anasarca.

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* ℞. Gum. Myrrh. ℥fs. Solv. in
Spirit. Junip. C. ℥fs. et adde
Aq. Menth. Sativ. ℥v.
Kal. Præparat.
Ferri Vitriolat. ää ℈j.
Tinct. Scillæ ʒij.
Spirit. Æther. Nitros. ʒjfs. M.
fr. Mistura cujus capiat æger Coch. iij. 4tis horis.

The diuretic which formerly was chiefly employed in this species of dropsy, is the squill, because, besides this effect, it possesses that of promoting an evacuation from the glands of the lungs: in administering it, we should push it to as large a quantity as the stomach will bear without exciting nausea. Any of the forms recommended under the head of Anasarca may be prescribed.

If, after a sufficient length of time, we should fail to procure any good effects from a use of the squill, we ought then to make trial of the digitalis, as advised under the same head, and that of Phthisis; and if this should likewise fail, we must then have recourse to the crystals of tartar, either separately or combined with gamboge or foxglove.*

In those cases where great thirst, with dryness of the skin, prevail, we may perhaps employ diaphoretics with advantage. Small doses of antimonials, or of the pulvis ipecacuanh. composit. repeated every two or three hours, may be given for this purpose, washing them down with some warm diluent liquor.

At the same time that we have recourse to these means, we should apply blisters to the chest, shifting them from one side of it to the other, whenever they shew a disposition to heal up; to prevent which, they ought to be dressed with some kind of stimulating ointment.

Where hydro-thorax is complicated with convulsive breathing, resembling the common periodic asthma, it may be relieved by giving a grain of opium every hour for two or three doses, with about a drachm of æther in cold water, continuing the digitalis as before recommended.

In a letter from Mr. Barr of Birmingham, to Dr. Beddoes,† we are informed of the happy effects which were derived in a case of hydro-thorax from the aid of pneumatic medicine, in conjunction with other remedies, which of themselves had availed nothing.

He states, that his patient's face was become pale and emaciated, his eyes stared as if taking a last conscious view of their objects, his legs were swelled to such a degree that the skin was become much inflamed, and in danger of bursting; he had a continued tenesmus, and made very little urine; he could not endure a horizontal posture for a moment, but was under the necessity of being bolstered upright in bed through the night; even then, he slept little, and that little was disturbed and unrefreshing, for he frequently started from his sleep, under an impression of immediate suffocation.

One quart of oxygen, mixed with nineteen of atmospheric air, was

† See his Considerations on the medicinal Use and Production of factitious Airs.

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* ℞. Fol. Digital. Purp. Exsiccat. gr. vj.
Crystal. Tartar. ʒvj.
Pulv. Aromat. ℈j. M.
fr. Pulv. in Chartulas vj. distribuend. quarum sumat unam bis terve de die.

directed to be inhaled every day; but as the symptoms were very urgent, it was thought right to join the use of those active medicines which had been prescribed for him before to no effect. He was ordered to take half a grain of digitalis in substance every evening, and four ounces of a decoction of angustura bark in the course of each day.

On the third night after inspiring the factitious air, he found himself more composed, he could remain longer in one posture, and the startings during sleep seemed both less frequent and less violent. Every night he was sensible of amendment; in ten days he could bear the removal of several of the pillows that bolstered him up in bed, and he could sleep for three or four hours without one starting fit. The swellings of his legs began now to subside, the tenesmus was entirely removed, the quantity of urine was considerably increased, and he could walk up stairs with much ease; his appetite and cheerfulness began to return, and the pale face of disease to give place to the florid countenance of health.

In the course of the second week the quantity of oxygen had gradually been increased to two quarts a day, diluted as before. In four weeks from the patient's beginning to inspire the vital air, not a vestige of the disorder remained, except weakness: he could lay his head as low in bed as when in perfect health, and sleep the whole night; no swelling of the legs remained, no difficulty of breathing upon ordinary exertion, and every function was performed with regularity and ease. He discontinued the use of all medicines except a laxative pill occasionally, and at the age of sixty seemed to possess uncommon strength, agility, and vivacity.

Such is the report made by Mr. Barr, of the effects of vital air in hydro-thorax, which from having proved so highly beneficial, we ought, under failure of the usual means, certainly to employ as an auxiliary.

If all our endeavours to carry off the water, or promote its re-absorption, prove fruitless, and a fluctuation is evidently perceptible, we should then perform a paracentesis of the thorax. Where it is loose in the sacs of the pleura, we may, with the assistance of diuretics joined with tonics, possibly effect a cure by means of this operation; but where it is accumulated in the pericardium, in hydatids, or in the cellular texture surrounding the bronchiæ, we shall derive no advantage from it.

The practice of evacuating water contained in the thorax by an incision, is of as ancient a date as the days of Hippocrates; and, when done by a skilful surgeon, is attended with little danger. For the mode of performing the operation, I beg leave to refer to Mr. Bell's System of Surgery.

IV. Swellings of the solid Parts, or Intumescentiæ solidæ.

Of the RICKETS, or RACHITIS.

THE characteristic marks of this disease are, an uncommon size of the head, swelling of the joints, flattened ribs, incurvation of the spine, distortion of the cylindrical bones, protuberance of the belly, and general emaciation.

Rickets is an hereditary disease in some families, though parents that have been affected with it, have sometimes a healthy and robust offspring. In some instances, I think, it can be traced to a venereal taint, which though not the immediate cause, is very often an exciting one of it and scrofula. At least, it is certain that syphilis, transmitted from parents to their children, appears in the latter in a manner very different from that in which the former are affected. We find that the children of the indigent and profligate are those most generally afflicted with rickets; but at the same time it must be allowed, that there are many circumstances which conduce to this disease; such as a damp and cold residence, impure air, inattention to cleanliness, want of due exercise, a deficiency of food, and debility. Difficult dentition, and the pain and bowel complaints arising from it, may favour, in a powerful manner, the action of the exciting causes of rickets.

The proximate cause of the disease is now supposed to be a deficiency of the phosphate of lime, or animal gluten, in the bones; hence the latter are deprived of that necessary strength and solidity in consequence of the prevailing debility in the vessels, so that the former, instead of being conveyed to the bones, is deposited in other parts of the body. Thus we find particles of lime often evacuated in the urine.

The disease seldom appears before the ninth month, and very rarely shews itself after the second year of a child's age. It is more frequently met with among the children of the poor than in those of higher rank, and seems to be almost solely confined to cold climates where much moisture prevails, which seems to indicate that a peculiar atmosphere has a great share in giving rise to it.

It usually comes on slowly, and the first appearances of it to be observed are, a flaccidity of the flesh, emaciation of the body, paleness, and loss of colour in the cheeks, if they have been rosy, and a slight degree of tumefaction of the face. The head at the same time appears large with respect to the body, and the sutures and fontanelle are preternaturally open. The head continuing to increase in size, the forehead becomes at length unusually prominent, and the neck appears very slender in proportion to the head. Dentition is at the same time very slow, and much later than usual; and the teeth that do appear soon spoil, and are apt to fall out. The ribs lose their convexity, the sternum protrudes in the form of a ridge, the spine is incurvated, and the epiphyses at the several joints of the limbs become swelled, while at the same time the limbs between the joints appear to be more slender than before, and, from their

inability to support the weight of the body, become somewhat flexible, and at last much distorted.

With these symptoms, the child experiences a great diminution of its strength, is averse to making the least exertion, and is unable to walk. Its appetite is not often much impaired, but its stools are usually frequent and loose, and its abdomen appears uncommonly full and tumid. With regard to its mental faculties, the understanding is most generally very mature, but in a few cases stupidity or fatuity ensues. At the commencement of the disease there is no fever present; but in its more advanced stage a frequent pulse, with other febrile symptoms of a hectic nature, attend.

In some cases the disease proceeds no further, and the child gradually recovers his health and strength, the limbs being left, however, in a distorted state. In others it continues to increase, till at last every function of the animal economy becomes affected, and the tragic scene is closed by death.

Cretinism (which is to be met with very generally among the inhabitants of that part of Switzerland nearest to Italy, in the deepest vallies of the Alps, where the atmosphere is extremely humid, in consequence of numerous waterfalls and rivulets that emit powerful exhalations through the influence of the sun's heat, while they are secluded from the access of every drying wind) is a disease which has been supposed to be only as high a degree of rachitis as human nature can possibly sustain.* This opinion is corroborated by an observation that the different stages or degrees of the evil correspond with the variations in the atmosphere. Those, for example, who inhabit the deepest and most recluse vallies are reduced to the lowest state of imbecility and idiotism; in those who are somewhat more elevated the mental powers are not so completely obtunded; and others still more elevated, and of course less exposed to exhalations, will probably be deformed merely with wens or swellings about the joints, and other symptoms of rachitis. Those who are nearer to the summits are perfectly exempt from all these appearances.

The head of the cretin is deformed, his stature diminutive, his complexion sickly, his countenance vacant and destitute of meaning, his lips and eyelids coarse and prominent, his skin wrinkled and pendulous, his muscles loose and flabby, and frequently he is affected with an enlargement of the thyroid gland, called goitre (see Bronchocele,) which greatly adds to his unsightly aspect. The qualities of his mind correspond to the deranged state of his body, and the disease prevails in all the intermediate degrees from excessive stupidity to complete fatuity.

Cretinism was observed in Chinese Tartary by Sir George Staunton in a part of that country much resembling Savoy and Switzerland in its Alpine appearance.

The rickets, although attended with much distortion of the bones,

* See Dr. J. F. Akerman's Inquiry into the Causes of a singular Deviation from the human Species in the Alps.

and various other unpleasant symptoms, very seldom proves fatal; and we are only to regard it as attended with danger where the distortion becomes so great as to affect the office of the lungs and other organs; or where the enlarged size of the head shews that it contains a considerable quantity of water within it; or where the food is passed unchanged by digestion, which denotes a highly diseased state of the mesenteric glands. Children at the breast are more exposed to peril than those that have reached three or four years.

Various morbid affections of the internal parts are to be observed on opening the bodies of those who have died of this disease. The brain has commonly been discovered in a flaccid state, with effusions of a serous fluid in its cavities. The lungs have been found in a morbid condition, seemingly from some inflammation that had come on towards the close of the disorder; the spleen and liver are flaccid and enlarged; the intestines are pale, or rather whitish; all the lymphatic glands, especially those of the mesentery and bronchiæ, are enlarged, and the latter sometimes suppurated; the bones, reduced to a fibrous state, are flexible, bent in several directions, and easily cut. With respect to the muscular parts, they have been found very soft and tender, and the whole of the dead body without that degree of rigidity which is so common in almost all others.

In the cure of the rickets we should proceed on the plan of invigorating the system. For this purpose, we must have recourse to such medicines as possess a tonic power, together with frequent immersion in cold water, the effects of which may be much increased by frictions with flannels, a free, open and dry air, a generous nutritive diet, with wine, and proper exercise by carrying the child in an horizontal posture. An erect one might be apt to increase the deformity.

As children cannot easily be prevailed upon to take the Peruvian bark, or any kind of bitters, for the purpose of invigorating the system, the metallic tonics must be employed. The most proper of these are the rubigo ferri, ferrum ammoniacale, and zincum calcinatum, which may be given as advised below,* together with a few grains of rhubarb to keep the body sufficiently open. The quantity of this is to be increased or diminished according to its effects; and the dose of the rubigo ferri, ferrum ammoniacale, and zincum calcinatum, may be augmented gradually.

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* ℞. Vin. Ferri gutt. xx. ad lx. ex Cochl. ij. Decoct. Cort. Peruv. bis in die.

Vel

℞. Rubig. Ferri gr. vj.
Pulv. Rhabarb. gr. iv.
Sacch. Alb. Pulv. gr. viij. M.
ft. Pulv. mane et vespere sumendus.

Vel

℞. Tinct. Ferri Ammoniacal. ℥j.
Capiat Cochl. min. j. in Aquæ frigidæ Cyatho bis in die.

Vel

℞. Ferri Ammoniacal. gr. ij—v.
Conserv. Rosæ q. s. M.
ft. Bolus bis terve in die capiendus.

Vel

℞. Zinc. Calcinat. gr. iv.—xij.
Pulv. Aromat. gr. xxiv.
Sacch. Alb. ℈ij. M.
ft. Pulv. in Chartul. No. xij. dividend. quarum capiat unam hora decubitus et mane quotidie.

Where the child can be persuaded to take the cinchona, we may give it at the same time with the metallic tonics, either in substance, decoction, or infusion, or we may try the extract.

To assist the effect of these remedies, a gentle emetic should be given occasionally, but more particularly in those cases where the appetite and digestion are considerably impaired. The moderate agitation of the abdominal viscera produced by this medicine, will greatly tend to remove the obstruction of the mesenteric glands. The bowels are to be kept gently laxative with rhubarb joined with a little neutral salt.

When the rickets are accompanied with mesenteric obstructions, deobstruents with small doses of rhubarb, and repeated frictions on the abdomen, will have a beneficial effect.—See Scrofula and Atrophia.

In cases of difficult dentition we should resort to the means advised under this head, and in those of worms to vermifuge medicines. In venereal taints we may prescribe tonics combined with mercurials.

Absorbents have been employed in rachitis by some practitioners, it is said, with considerable success, and may therefore be combined with the tonics before recommended.

In rickets, the principal advantage is to be derived however from general treatment: the patient, if a resident in a city, is to be removed to the country, where an elevated and dry situation should be chosen; he is to be supplied with a nourishing diet, and a moderate quantity of wine. But as the poor, among whom the disease is most frequently observed, cannot change their residence, they should be placed in the highest apartment of the house, which should be kept well ventilated.

The bed on which a ricketty patient lies should consist of a hair mattress or oaten chaff, or it might be made of dried fern-leaves, among which some aromatic herbs were mixed. Such beds are better than those made of feathers; for they do not yield to the weight of the body, and they are much drier. If the patient be very young, he should be placed on his back, so that the weight of his body may have as little influence as possible on the bones; but as it is painful to remain constantly in this position, he may be allowed to sit up now and then, but not on a soft chair: he is to be placed on a seat capable of making a uniform resistance, with a high straight back, and without arms. He should not be allowed to walk for a considerable time; at first he will be incapable of doing so without assistance, and the strings and ribands necessary for supporting him, contribute, by pressing on the parietes of the thorax, to deform that cavity.

Mechanical means have been proposed for obviating the effects of this disease, but it is nearly fruitless to attempt using any machines with very young children, and it is also impossible to confine them on their back in bed; besides, it would be extremely injurious to keep them constantly in this posture: the continued extension of the limbs, and the inactivity of the muscles, would add to the general debility, and consequently increase the disease. Splints applied to the limbs, strong leather boots, and the apparatus for the spine, are really useful only in those cases where the patient is of a certain age, and when the progress

of the disease is gradual, and the strength not too much exhausted; and even in most of these cases the inactivity necessarily occasioned by these machines, is productive of disadvantages which are not compensated by their good effects. Apparatus of this kind may probably therefore be fitter for correcting vicious attitudes contracted by children of a weak frame, than deformity arising from rickets.

Mr. John Veirac, surgeon at Rotterdam, in his Treatise on the Rickets, which obtained a premium from the Society of Arts and Sciences at Utrecht, asserts that the acidity of the milk in the stomachs of infants, is incorporated with the mass of blood, and insinuates itself into the very substance of the bones. We are informed by him, that the blood in these cases after death, effervesces with the aqua ammoniæ. The cure he recommends, corresponds with this theory, and consists in the exhibition of alkaline medicines.

Mons. Bonhomme of Paris, in his Memoir on the Nature and Cure of Rachitis,* advises a similar mode of treatment. According to this gentleman, the disorder arises, on the one hand, from the developement of an acid, approaching in its properties to the vegetable acids, particularly the oxalic, and on the other, from the defect of phosphoric acid, of which the combination with animal calcareous earth, forms the natural basis of the bones, and gives them their solidity. From this opinion he infers, that the proper treatment of rachitis must turn on two principal points, viz. to prevent the developement of the oxalic acid, and to re-establish the combination of the phosphoric with the basis of the bones.

These intentions, he thinks, may often be accomplished by the internal use of phosphate of lime and phosphate of soda, and by the external use of alkaline lotions. In this Memoir, he relates several cases in which these practices were apparently attended with the best effects. A powder was formed of equal parts of phosphate of lime and phosphate of soda, and taken by infants twice a day, to the extent of a scruple for a dose. The alkaline solution was made by dissolving half an ounce of common potash or salt of tartar, in a pound of very pure spring water. When this solution is to be used, the skin must first be rubbed with a dry cloth, or a piece of fine flannel. After this precaution, the diseased parts are to be washed carefully with the warm solution, and at length wiped so as to leave no trace of moisture. This wash must be repeated at least twice a day.

We are further informed by Monsieur Bonhomme, that he has seen various instances of children cured of their disposition to rachitis, merely by washing with the alkaline liquid, but he considers the internal remedies as possessing superior efficacy.

He contends, that the calcareous phosphate, taken internally, is really transmitted by the lymphatic passages, and contributes to ossification, and that the internal use of the calcareous phosphate, whether alone or combined with the phosphate of soda, powerfully contributes to restore the natural proportions in the substance of the bones, and thereby accele-

* See Dr. Duncan's Annals of Medicine for 1797.

rates the cure of rachitis. In support of these opinions, he relates various experiments made on young fowls, some of which took a proportion of calcareous phosphate with their food. After an exact comparison there could (he tells us) be no doubt of the efficacy of calcareous phosphate in favouring the progress of ossification.

ORDER III.

IMPETIGINES.

DEPRAVED habit, producing preternatural affections of the skin, or external parts of the body.

Of SCROFULA.

SCROFULA consists in hard indolent tumours of the conglobate glands in various parts of the body; but particularly in the neck, behind the ears, and under the chin, which after a time suppurate and degenerate into ulcers; from which, instead of pus, a white curdled matter, somewhat resembling the coagulum of milk, is discharged.

The first appearance of the disease is most usually between the third and seventh year of the child's age, but it may arise at any period between these and the age of puberty; after which it seldom makes its first attack. It most commonly affects children of a lax habit, with smooth fine skins, fair hair, and rosy cheeks. It likewise is apt to attack such children as shew a disposition to rachitis, and marked by a protuberant forehead, enlarged joints, and a tumid abdomen.

Scrofulous persons are often comely and handsome, and rather distinguished for acuteness of understanding and precocity of genius. They are however seldom robust, or able to endure much fatigue without having their strength greatly exhausted, and their flesh much wasted; but when they once begin to regain these, their convalescence is usually rapid.

Scrofula prevails most in those climates where the atmosphere is cold and humid, where the seasons are variable, and the weather unsteady. From latitude 45 to 60 is the principal climate of this disease. A long continuance of inclement weather may increase any predisposition to scrofula; and in persons already much predisposed to it, any uncommon though temporary exposure to wet and cold, is sometimes an exciting cause of an immediate attack. Besides climate, every other circumstance which weakens the constitution, predisposes to scrofula; thus breathing impure tainted air unfit for respiration, and living upon food of an unwholesome and indigestible nature, which does not afford due nourishment to the body, favours an attack of scrofula, by reducing the strength of the system and making the person weakly. The neglect of due personal cleanliness and of salutary exercise, indolence, inactivity, the want of warm clothing, confinement in cold damp ha-

bitations, great bodily fatigue, &c. may all be regarded as so many occasional causes.

Scrofula is by no means a contagious disease, but beyond all doubt is of an hereditary nature, and is often entailed by parents on their children. There are indeed some practitioners who wholly deny that this or any other disease can be acquired by an hereditary right; but that a peculiar temperament of body, or predisposition in the constitution to some diseases, may extend from both father and mother to their offspring, is, I think, very clearly proved; for example, we very frequently meet with gout in young persons of both sexes, who could never have brought it on by intemperance, sensuality, or improper diet, but must have acquired the predisposition to it in this way.

A remarkable circumstance attending the transmission of scrofula, is, that although it is certainly an hereditary disease, it does occasionally pass over one generation and appear again in the next, so that the grandfather and grandson (the first and third generations) shall both be scrofulous, while the intermediate one, which holds the more intimate relation of father and son, and connects the two others together, shall be exempted from any attack of the disease.

The matter which scrofulous sores generate, does not seem to possess much acrimony; for if the sore be of a limited extent, the system does not suffer by its continuance; nor do the neighbouring parts seem to be much affected by its vicinity. Neither is it contaminating, as has been proved by Mr. Kortum,* who attempted to transfer scrofula from one person to another by inoculation; but although he took great pains to insert the matter completely, and although he repeated the experiment frequently, yet all his attempts failed of success, as no disease was communicated, nor even any evident irritation, excited at the place where the matter was inserted. All apprehension of scrofula being propagated by contagion or contact, appears therefore to be a groundless prejudice.

The late Dr. Cullen supposed scrofula to depend upon a peculiar constitution of the lymphatic system. Some writers have attributed much influence in its production to the habitual use of impure water, among whom is the late Dr. Heberden. In my opinion, scrofula is a disorder closely connected with debility and lax fibres.

It is a disease of very frequent occurrence in this country, appearing under various forms, and in different degrees of severity, from a state of mildness, which hardly betrays any perceptible external symptoms, to a state of violence, which produces the most miserable objects of human wretchedness; and whenever it mingles with any accidental or local complaint, it makes all the symptoms worse and more difficult to cure: this happens particularly in syphilis.

The attacks of scrofula seem much affected or influenced by the periods of the seasons. They begin usually some time in the winter and spring, and often disappear, or are greatly amended, in summer and autumn. The first appearance of the disorder is commonly in that

* De Vitio Scrofuloso, p. 218.

of small oval or spherical tumours under the skin, unattended by any pain or discolouration. These appear, in general, upon the sides of the neck, below the ear, or under the chin; but in some cases, the joints of the elbows or ankles, or those of the fingers and toes, are the parts first affected. In these instances we do not, however, find small moveable swellings, but, on the contrary, a tumour almost uniformly surrounding the joint, and interrupting its motion.

After some length of time, the tumours become larger and more fixed, the skin which covers them acquires a purple or livid colour, and being much inflamed, they at last suppurate and break into little holes, from which at first a matter somewhat puriform oozes out; but this changes by degrees into a kind of viscid serous discharge, much intermixed with small pieces of a white substance, resembling the curd of milk.

The tumours subside gradually, while the ulcers at the same time open more, and spread unequally in various directions: after a time, some of the ulcers heal; but other tumours quickly form in different parts of the body, and proceed on in the same slow manner as the former ones, to suppuration. In this way the disease goes on for some years, and appearing at last to have exhausted itself, all the ulcers heal up, without being succeeded by any fresh swellings; but leaving behind them ugly puckerings of the skin, and scars of considerable extent. This is the most mild form under which scrofula ever appears.

In more virulent cases the eyes are particularly the seat of the disease, and are affected with ophthalmia, giving rise to ulcerations in the tarsi, and inflammation of the tunica adnata, terminating not unfrequently in an opacity of the transparent cornea.

In similar cases the joints become affected; they swell, and are incommoded by excruciating deep-seated pain, which is much increased upon the slightest motion. The swelling and pain continuing to increase, the muscles of the limb become at length much wasted. Matter is soon afterwards formed, and this is discharged at small openings made by the bursting of the skin. Being however somewhat of an acrimonious nature, it erodes the ligaments and cartilages, and produces a caries of the neighbouring bones. By an absorption of the matter into the system, hectic fever at last arises, and in the end proves fatal.

The bones also of scrofulous persons partake of the general disease in the constitution: they seem to contain a smaller proportion of animal earth, and a larger of gelatinous matter, than what accords with the composition of a healthy bone, on which account they are exceedingly susceptible of a morbid action. The diseases to which they are most liable are general and partial enlargement, inflammation, suppuration, and exfoliation. They are also easily fractured, which facility is much increased, especially in the long bones, by the deficiency of solid substance; for the cylindrical shell is preternaturally thin, and therefore mechanically weak, so that the bone breaks upon the application of an inconsiderable force.

The primary attacks of scrofula often admit of an apparent cure, while their sequelæ are secretly laying the foundation of diseases which

undermine the patient's constitution, and unexpectedly manifest their insidious effects at a distant period of time, when no suspicion was entertained of their existence.

When scrofula is confined to the external surface, it is by no means attended with danger, although, on leaving one part, it is apt to be renewed in others; but when the ulcers are imbued with a sharp acrimony, spread, erode, and become deep, without shewing any disposition to heal; when deep-seated collections of matter form among the small bones of the hands and feet, or in the joints; or tubercles in the lungs, with hectic fever, arise, the consequences will be fatal.

On opening the bodies of persons who have died of this disease, many of the viscera are usually found in a diseased state, but more particularly the glands of the mesentery, which are not only much tumified, but often ulcerated. The lungs are frequently discovered beset with a number of tubercles or cysts, which contain matter of various kinds. Scrofulous glands, on being examined by dissection, feel somewhat softer to the touch, than in their natural state; and when laid open, they are usually found to contain a soft curdy matter mixed with pus.

Scrofula is a disease, the cure of which is of acknowledged difficulty. Its treatment naturally divides itself into two periods. The first is that, in which, without any local sore or other marked symptoms of disease, there is sufficient evidence of a scrofulous predisposition prevalent in the system. The other is that, in which some local sore, or other scrofulous symptom, which requires appropriate management, that may either concur with the general treatment of the constitution, or interfere with it, has actually taken place.

As scrofula is greatly promoted by the slow operation of a number of circumstances, which produce a gradual change in the constitution, there is great reason to expect benefit from placing the patient in a different situation of circumstances. If, for instance, the continuance of improper diet has seemed to favour the appearance of the disease, an amelioration of it will naturally counteract this tendency. A similar advantage will be derived from substituting the respiration of pure salubrious air, instead of what is tainted and unwholesome; and in like manner, every management conducive to health, will contribute to correct the disposition to scrofula.

The languor and debility which prevail in scrofula, naturally indicate the necessity of employing a plentiful supply of wholesome nourishment, of which light animal food ought to form a fair proportion. Where there is occasional atony in the stomach and languor, a moderate allowance of wine will be likely to prove salutary, but it will be best to give it between meals, with a bit of bread or cake.

To ward off an attack of the disease in those who shew a predisposition to it, it will be advisable that they take every day regular and moderate exercise, continued sufficiently long to dispose them to rest, without inducing any degree of fatigue. When the patient is either too young or too weakly to take sufficient exercise, by exertions of his own, external frictions assiduously applied, and persisted in for a length

of time, are usually substituted, and, in young children in particular, have been practised in many cases with a very good effect.

Another highly important external application is bathing the body. The bath may be either warm or cold, simple or impregnated with various medicinal substances. Cold bathing, especially in the sea, is a remedy universally employed in scrofula, and apparently with the greatest advantage in many cases; for it appears not only to improve the person's health and strength, but likewise to promote the dispersion of enlarged glands, and the resolution of indolent swellings in the joints, even after they had attained a considerable size. But in order that cold bathing may be practised with safety and advantage, the constitution should have vigour to sustain the shock of immersion without inconvenience. If the immersion be succeeded by a general glow over the surface of the body, and the patient feels cheerful, and has a keen appetite, we may conclude that the bath agrees with him; but if he shivers on coming out of the water, continues chilled, and becomes drowsy, we may be assured that the cold bathing will not prove serviceable, and ought therefore to be discontinued. In all weakly patients the immersion should be momentary.

When any doubt is entertained with regard to the probable effects of cold bathing, it will be a prudent precaution to premise the use of a warm bath, which is often serviceable in those cases of scrofulous weakness, which forbid the employment of a cold one. One great advantage of warm bathing is to relieve a certain dryness of the skin, which often accompanies scrofulous emaciation and weakness, and occasions much oppression and distress. A small number of immersions is, in general, sufficient to accomplish the object, and to prepare the patient for the safe and beneficial use of the cold bath; though, when a great degree of scrofulous debility prevails, it may be necessary to continue the warm bathing, at the rate of two or three immersions a week, for some length of time.

At the commencement of a course of warm bathing, an immersion from twelve to twenty minutes, with a temperature of water varying from 90 to 100 of Fahrenheit's thermometer may be recommended; but persons much accustomed to the practice of warm bathing, in general remain longer at a time in the bath, and use a higher temperature of heat.

To promote the efficacy of the warm bath, frictions, with some stimulant substance, are often employed, and with advantage, particularly in certain cases of scaly scrofulous eruptions, and some of the more solid kinds.

The clothing of scrofulous patients ought to be of such a nature, as completely to protect the wearers against any inclemency of the weather, and to keep them comfortable and warm. The reason why weakly people so sensibly feel the vicissitudes of weather in this country is, that in general they are too thinly clad, and this inconvenience has been much increased of late, by the airy and light modern attire, adopted by our fashionable females.

Every weakly scrofulous person, who wishes to recruit his health

and strength, should retire to bed betimes every night, rise early in the morning, and, if possible, select for his residence a situation where the air is pure and dry. It is indeed the unavoidable lot of the poor in large towns, and particularly in manufacturing ones, to inhabit cellars or other cold, confined, damp, and ill-ventilated places.

It is generally recommended to scrofulous persons, who use sea-bathing, to drink a little of the water daily, that it may act as a gentle purgative, and empty the intestinal tube of all feculent matters. When not at the sea-side, a solution of any of the neutral salts, such as the kali tartarisatum, kali vitriolatum, &c. may be substituted.

Calomel is, however, by far the most celebrated of all the purgative medicines, which have been employed in the treatment of scrofula, and it is undoubtedly a serviceable remedy in many stages of the disease. To enjoy its beneficial effects however, with safety, we must be careful to avoid giving it in so large a quantity, as to produce the specific effects of mercury in their full extent; for it is well known that any deep mercurial impression on the system, aggravates every symptom of scrofula. Calomel, however, when given cautiously in moderate doses, so as to act merely as an alterative, or gentle purgative, agrees well with scrofulous complaints, and greatly contributes to discuss tumours and resolve indurations of such a nature. But to produce the desired effect, this alterative course must be continued for a sufficient length of time, carefully watching its course, lest it should exceed the prescribed bounds, and produce any ptyalism, or severe purging. The dose must be regulated by the age of the patient, and other circumstances. A few weeks trial will be sufficient to determine the probability of removing or relieving the complaint.

In recent cases of obstruction, calomel joined with tartarised antimony,§ has been used with benefit; and during the progress of the disease, where there is much irritation, or where there are deep-seated affections of the joints, opium has been added.

Alteratives, such as the hydrargyrus cum sulphure,† Plummer's pill,‡ as likewise antimonials, with decoctions of guaiacum, sarsaparilla, sassafras, and mezereon, together with the Lisbon diet-drink (which is a combination of all these,) have likewise been much employed, but usually without any seeming advantage.

Muriated barytes is said to have been given in some cases of scrofula with success. The proper dose is from three to ten or twelve drops

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§ ℞. Pulv. Cretæ Præparat. ʒj.
Calomelanos gr. iij.—vj.
Antimon. Tartarisat. gr. ij. M.
ft. Pulvis in Chartulas No. xij. dividend.
quarum sumat j. bis in die.

† ℞. Hydrargyr. cum Sulphur. gr. xv.
Pulv. Antimon. gr. j. M.
ft. Pulv. nocte et mane sumendus.

‡ ℞. Calomel.
Sulph. Antimon. Præcip. āā ʒfs.
Gum. Ammon. ʒj.
Bals. Peruv. q. s. M.
ft. Massa in Pilulas xxx. distribuendæ.
quarum capiat j. vel ij. omni nocte.

twice a day, according to the age of the person. Beyond a certain dose, it is apt to occasion sickness, tremors, and a loss of power.

The muriate of lime, we are given to understand by Dr. Wood,* has been much employed at the Newcastle Infirmary in lieu of the muriate of barytes, and with two great additional advantages; viz. its action was more immediate, and no bad consequences attended an over-dose, while at the same time its efficacy was decisive. He used it at first in the form of crystals, by dissolving three grains in an ounce of water; but he found the process of crystallizing the salt to be too tedious and difficult for general use, and that it did not possess any advantage over a fluid solution of the carbonate of lime in muriatic acid. Of the solution prepared agreeably to the Edinburgh Pharmacopœia, about a drachm for adults, and thirty drops for children, given in water twice or thrice a day, will be a sufficient dose.

A late writer on scrofula† tells us, however, that the muriate of lime had been employed by his colleague Professor Thomson of Edinburgh, in various cases of this disorder, without having derived benefit from it in a single instance.

Medicines of the narcotic tribe, but more particularly hemlock, have also been used for the cure of scrofula, both in the stage of swelling, and that of ulceration. From my own experience of hemlock, as well as the report made of it by others, it appears, when administered internally,‡ to prove often serviceable in discussing swellings of this nature; and it likewise appears, in some cases of ulceration, to have afforded relief by being employed externally, either in the form of poultice, or fomentation, or both. As an internal remedy in the ulcerated stage of scrofulous tumours, it seems to be inefficacious.

To enjoy the full benefit of the curative powers of cicuta, it will be necessary to give it to the full extent that the constitution can bear with impunity. The limit of the dose, therefore, is to be measured by its effect in producing incipient symptoms of giddiness or nausea, which disturb the functions of the head and stomach. The course requires to be continued many weeks, before the good effects of its operation are perceptible.

The juice of the fresh leaves of the tussilago or coltsfoot, is said to have been given with some advantage. When it cannot be procured in the fresh state, a strong decoction of the dried leaves may be substituted.

Lime-water and alkalies, as the sal sodæ, are enumerated among the remedies often used in this disease, and administered, no doubt under the supposition of an acrid acrimony prevailing in the fluids. In some instances, a junction of these with cinchona has been attended with a very good effect.

* See the Edinburgh Medical Journal, vol. i. p. 147.
† See Treatise on Scrofula by Mr. J. Ruffell, p. 85.

‡ ℞. Extract. Cinchon. ʒij.
——— Cicutæ ʒj. M.
fiant Pilul. xl. quarum sumat ij.—iij. bis vel ter de die.

Burnt sponge is another remedy which has been much administered in scrofula, and frequently with advantage. It may be given either in the form of a bolus or draught. ‡ A more active medicine, however, is the natron præparatum, which is now employed in lieu of the former, of which, indeed, it is the basis. The dose, in these cases, is from ten or twenty grains to a drachm, twice or thrice a day. §

To invigorate the constitution, it will be necessary in the cure of scrofula to employ such medicines as are supposed to impart strength to the body. Of the vegetable class, the cinchona is the most esteemed; but previous to its use, and to insure the full benefit from it, the bowels must be previously cleared of any morbid accumulation of fæces, either by calomel or the neutral salts, in the manner before mentioned. The cinchona seems, however, best suited to those cases where there are extensive ulcers or large abscesses, with copious exhausting discharges of purulent matter; and in general to communicate that degree of energy to the actions of the system, which tend to support and confirm the patient's strength. If the stomach will bear the powder, it will be the best mode of exhibiting it; but should it disagree, then either a decoction or infusion of it may be substituted, or we may try the extract properly dissolved.

If none of these preparations agree with the patient, or we wish after a time to change the medicine, some of the other vegetable tonics, such as columbo, cascarilla, gentian, &c. (for various formulæ of these see Dyspepsia,) may be given; and to add to their efficacy, we may conjoin some agreeable aromatic, such as the tinctura cardamomi, or tinctura cinnamomi composita.

Of the mineral tonics, iron, and the sulphuric and nitric acids, are most valued for their virtue in the cure of scrofula. The latter are palatable, grateful to the stomach, and agree with all forms and stages of the disease. Dr. Mosman informs us,* that he found muriated barytes, and the nitric acid, to increase the appetite, and impart vigour to the system; but he never saw them exhibit any beneficial effect on the morbid glands.

* See his Essay on the Nature, Origin, and Connexion of Scrofula and Glandular Consumption.

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‡ R. Spong. Uft. ℥j.—ʒfs.
Pulv. Rhabarb. gr. iij.
Mel Optim. q. s. M.
ft. Bolus bis in die fumendus.

Vel

R. Spong. Uft. ℥j.
Confect. Aromat. gr. x.
Aq. Menth. Sativ. ʒj.—ʒjfs. M.
ft. Hauftus.

§ R. Natri Præparat. ʒiij.
Pulv. Cinchonæ ʒjfs.
Mucilag. Gum. Arab. q. s. M.
ft. Electuarium cujus fumat quantitatem nuc. mofchatæ ter in die.

Vel

R. Decoct. Cinchon. ℥x.
Tinct. Card. C. ʒij.
Natri Præparat. gr. xv. M.
ft. Hauftus bis terve de die fumendus.

Vel

R. Sal. Sodæ ʒij.
Aq. Puræ ℥iv.
Tinct. Lav. C. ʒfs.
Syrup. Cort. Aurant. ʒij. M.
Capiat Cochl. larg. ij. ter quaterve in die.

A few drops of either of the acids may be given, with each dose of the cinchona, or other vegetable tonics. Of the preparations of iron, the carbonate, ferrum ammoniacale, muriated solution, and chalybeate waters, have been found most efficacious. We may give doses of these proportioned to the age of the patient, twice or thrice a day. To derive the full benefit from tonic medicines in scrofula, it will be advisable occasionally to administer the vegetable and mineral at the same time in combination. (See formulæ under the head of Dyspepsia.) About ten grains of the ferrum ammoniacale, in the space of twenty-four hours, will be sufficient for an adult, and so in proportion for children. During the use of tonics, a few grains of rhubarb, with one or so of calomel, may be given now and then.

Arsenic is another mineral production which has been employed in scrofula with some advantage, and is said to contribute greatly to the cure of scrofulous ulcers. From one to five drops of a solution of this (see Intermittents) may be given to children twice or thrice a day, according to their age, and from five to ten, or more, to grown persons, diminishing the quantity if it affects the bowels.

Besides employing medicines internally to correct the cachectic state of the fluids and strengthen the system, we are often obliged likewise to make use of external applications.

Upon the first appearance of any tumour, it will always be advisable to disperse it, if possible, as we shall thereby relieve the patient from the risk of some very troublesome consequential symptoms. The discutients commonly employed are, different saturnine applications, the aqua ammoniæ acetatæ, solutions of the muriate of ammonia, camphorated and ammoniated oils, a mixture of fresh bile with saponaceous liniment, plasters of soap, ammoniac, and mercury, sea-water poultices, hemlock, mercurial ointment, electricity, and likewise blisters. The quercus marinus or sea-tang, bruised, and made into a poultice, is an application much recommended. These may be tried in rotation, and where one fails, another may probably succeed. Where sea-bathing can be obtained, it will prove the most efficacious of all remedies.

It is only, however, in the incipient stages of the attack, and before effusion has attained a stationary state, that any benefit is to be expected from discutient applications; for after the parts have lost their activity, and have become indolent, these remedies will have little or no power over them.

The topical detraction of blood, by means of leeches, will prove a powerful mean in those cases of large glands which lie superficially, or adhere to the surface, and which are attacked with inflammation, that threatens to terminate in suppuration.

In a case of some years standing, in which the glands of the neck had become enormously enlarged, and the tumour was attended with excruciating pains, much relief was obtained by anointing the parts morning and night with an ointment composed of one drachm of tartarised antimony rubbed with an ounce of lard, even after considerable doses of opium administered internally had failed to alleviate the pain. After using

the ointment a few days several pustules of a considerable size appeared on the tumour, being the usual consequence of its application.

Galvanism and smart electrical shocks passed through scrofulous tumours of an indolent nature, particularly when occupying glands in the neck, have in some instances had a good effect in dispersing them.

When we fail in our attempts to disperse scrofulous swellings, and a suppuration has commenced, we are to promote and expedite this as much as we can. Poultices, and other warm applications, have little effect, however, in bringing forward these kind of tumours, and when long used, they tend to weaken and relax the parts so much, that the sores which ensue, are rendered difficult of cure. Washing the parts with strong brine has sometimes been employed with success, and has expedited the formation of matter in scrofulous swellings.

The application of blisters to glandular swellings of this nature, has sometimes proved effectual in occasioning them to suppurate quicker than they otherwise would have done.

Where the activity of the inflammation is on the decline, and the swelling of a gland has become indolent and stationary, the stimulus of a blister imparts fresh vigour of action, which possibly may dispose the swelling to suppurate. In some instances, both blistering and electricity have however been attended with a direct contrary effect, and have occasioned them to disperse.

Where tumours are situated upon any of the large joints, and suppurate, or there are deep-seated collections which gradually increase, without shewing any tendency to advance towards the surface, the matter should be discharged by making an opening with a lancet or trocar, or by passing a seton through them, which probably may be the preferable way; but where they are situated so as that no harm can arise from the matter remaining in them, they ought always to be suffered to break of themselves; because the scrofulous matter is liable to be rendered more acrid by communication with the air, and the ulcers usually prove more tedious and difficult to cure, when the tumours are opened, than when they are allowed to evacuate their contents spontaneously.

To correct the discharge, repress or destroy any luxuriant fungous growth, promote a proper suppuration, and dispose the ulcers to heal, it is usual to employ gentle escharotics, such as the hydrarg. nitrat. ruber, verdegris, and burnt alum, which may either be sprinkled over them, or be applied mixed up with some mild ointment, as the unguentum cerae. Where there is a languid action in any sore, which suspends its progress towards amendment, and renders it stationary, the use of gentle stimulants will be proper.

The application of linen cloths dipped in cold water, sea-water, or lime-water, and renewed as frequently as they become dry, throughout the course of the day, with that of some mild plaster or ointment, such as the unguentum cerussae acetatae, spread upon fine lint, by night, is a mode of treatment much recommended in scrofulous ulcers.

If these fail in healing the ulcers, the linen rags may be moistened with a solution of half an ounce of cerussa acetata in a pint of water, from which application I have seen very good effects derived. Dr. Darwin used powdered oak-bark mixed with white lead.

Scrofulous ulcers which had resisted many other remedies, have healed under a weak solution of nitric acid in water.

In sores of an ugly, gleeting, and ill-conditioned appearance, much benefit has been obtained by the application of a poultice made with crumbs of bread moistened with a solution of about an ounce of the crystals of soda in a quart of water.

Painful and deep-seated ulcerations, the consequence of a scrofulous habit, and which are attended with much local irritation, have been relieved by a use of the Malvern water. Applied to the sore, it moderates the profuseness of the discharge, corrects the fœtor which so peculiarly marks a caries of the bone; promotes the granulating process and a salutary exfoliation of the carious part; and by a long perseverance in this course, very dangerous and obstinate cases have at last been entirely cured. Inflammation of the eyes, especially the ophthalmia, which is so troublesome in scrofulous habits, often yields to this simple application.*

DISEASED MESENTERIC GLANDS.

CHILDREN of a scrofulous habit are very often affected with a diseased state of the mesenteric glands, the little patient usually complaining of a deep-seated lancinating pain within the abdomen, which gradually enlarges, while the other parts of the body are emaciated. (See Atrophia.) The countenance becomes altered, the eyes seem glassy and sunk in their sockets, the nose is sharpened, the cheeks are of a marble whiteness, unless when they are flushed with hectic fever, and the whole body is indeed of the same hue. Sometimes the lips are swelled, and of a deep red colour, and sometimes the angles of the mouth are beset with small ulcers. The state of the bowels is variable, though more commonly relaxed than otherwise. When they are relaxed, the stools consist chiefly of frothy mucus tinged with bile, by which discharge an excoriation of the verge of the anus is now and then produced.

In the advanced stage, the child is fretful, peevish, and inactive. There is usually an accession of fever towards the evening, the pulse being at that time generally about 120, while at other times of the day it is seldom less than 100 in a minute. There is but little thirst, and the tongue suffers no change, except perhaps being now and then streaked with white at the sides. The skin is dry to the touch and rough, and the cuticle is thrown off in scales.

This diseased state of the mesenteric glands is to be distinguished from enteritis, by there being no vomiting or difficulty in procuring evacuations with the ordinary quantity of medicines, and but little pain being perceived on pressure; and it may be known from the febris infantum remittens, by the accession of fever being attended with restlessness, rather than an inclination to sleep; by the excretions not being particularly changed from their natural appearance; by the accession of fever

* See Dr. Saunders's Treatise on Mineral Waters.

occurring only in the evening, and by the duration of the complaint; whereas in the remitting fever, the paroxysms are attended with drowsiness, the evacuations are unnatural, both in smell and colour; the accessions of fever are very irregular, as well in their recurrence as in their duration; and the disease has more the character of an acute, than of a chronic one.

The disorder attacks children from the age of a few months to ten or twelve years; and the earlier it appears, the greater will be the danger. In all ages, the prognostic should be guarded, and for the most part be unfavourable; for the disease is generally far advanced before it becomes an object of medical attention, owing to its gradual progress, and being attended with scarcely any pain at first. An improvement of the colour and look of the countenance; the evening accession of fever being less severe, and its duration shortened; increase of the flesh and appetite, and a diminution of the size of the abdomen, are to be regarded as favourable signs. The most unfavourable symptoms are, a rapid increase of the emaciation, the evening accession of fever being severe, and continuing through most of the night, the abdomen being much enlarged and tense, and the cuticle peeling off.

In the treatment of this diseased state of the mesenteric glands, it will be necessary to give a purge of calomel* in a dose proportioned to the age of the child, twice every week. On the intermediate days, some slight tonic may be administered twice or thrice a day. (For these, see Atrophia.) If the bowels are confined between the purgatives with calomel, they ought to be opened with a solution of some of the neutral salts; but we are at the same time to be cautious not to exhaust the strength of the patient by the exhibition of purgatives. The less severe the evening accession of fever appears, the more free we may be in the exhibition of tonics, and the less necessity will there be for the use of purgatives: on the other hand, the more severe the evening paroxysm, the greater caution will be necessary in the exhibition of tonics, and the less restraint be required in the use of purgatives. In addition to these means, frictions night and morning over the whole abdomen may greatly assist the cure. A tepid bath may be also serviceable.

The diet should be milk, gruel, sago, and other kinds of farinaceous food, with an admixture of dressed vegetables. Provided the patient exceeds the age of two or three years, a small quantity of animal food may be allowed. Animal broths, jellies, &c. may be given to all that are weaned.

Exercise in the open air should be especially recommended, and as that of the sea usually proves beneficial to such patients, where a residence near the coast is practicable, it should be adopted. Where the disease gives way, and a decided diminution of the fever, pain and enlargement of the abdomen, has taken place, we may recommend sea-bathing, beginning at first with a bath heated to about 80°, and so re-

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* ℞. Calomelanos gr. ij.—iv.
Pulv. Rhabarb. gr. iv.—x. M.
fr. Pulvis Cathartic us.

Vel
℞. Calomelanos gr. ij.—iv.
Kali Tartarizat. gr. viij.—℈j. M.

ducing the heat gradually, until at last the patient can safely bear the sea-water at its usual temperature. If it should be winter, the water may be heated to about 65 or 70 degrees.

Of the VENEREAL DISEASE, or SYPHILIS.

THE part of the world where this disease first originated has been much disputed, some looking upon it as of French extraction, and others supposing it to have been brought from America by the soldiers of Christopher Columbus. Be this as it may, it is certain that it was first observed at the siege of Naples in the year 1493, and that from thence it spread very rapidly throughout France, Spain, Germany, and other kingdoms.

The syphilitic poison is peculiar to the human species, and produces no effect whatever on any of the brute creation, as has incontestably been proved by repeated experiments, from whence we might infer that it was intended not only as a check against any deviation from the rules of connubial chastity, but likewise as an incentive (if I may be allowed the expression) to the gay and young, to form, at an early period of life, a satisfactory and honourable alliance, by which they may be enabled to gratify the passions implanted in them by nature, and propagate the species without the risk of disease.

Syphilitic poison cannot, as happens in other eruptive complaints, such as the small-pox, measles, &c. be conveyed in the form of vapour, or, in other words, by breathing air which is contaminated by a person labouring under it. To give rise to syphilis, it is necessary that the matter or poison should be applied to some part which is soft or covered with a mucous membrane, or else to some place where there exists either an excoriation, ulcer, or wound.

It has been doubted whether it is possible for the disease to be communicated from the mother to the infant in utero. However rare such an occurrence may be, still it is very possible, and many well-authenticated cases are on record to substantiate this fact.

Venereal matter is always sure to occasion a conversion of the mucus of the part, or of the fluids of the wound or ulcer to which it has been applied, into matter similar to itself; and when a sufficient quantity has been produced, it excites an inflammation in the mucous membrane or glands, or in the wound or ulcer, and is then absorbed into the system, and but very seldom before. Instances have indeed occurred in practice where absorption has taken place without any apparent effect of this kind being produced: they are however very rare.

The infection is almost always sure to shew itself first in that part to which the matter is applied; and as syphilis most generally arises in consequence of an intercourse between the sexes, so the symptoms usually shew themselves first in or about the organs of generation. Where a child at the breast communicates the contagion to its nurse, her nipples and breasts will be the parts first affected; and on the contrary, where it is the nurse that infects the infant, then its lips and other parts

of its mouth will shew the first symptoms of the disease. In like manner if the infection is conveyed to an accoucheur, in consequence of having a slight scratch on any of the fingers of the hand with which he officiates, the wounded part will shew the first appearances of the disease by becoming inflamed, soon after which the glands in the axilla of the same side will swell, be painful, and indurated.

Syphilitic matter, by being applied to the body, produces in the course of time either a local or a constitutional disease. By the former is meant, an affection confined solely to those parts to which the poison was first applied; and by the latter is to be understood a general taint of the whole system and mass of fluids. Syphilis is therefore generally sure to shew itself in both sexes, either as a local affection under the form of of a gonorrhœa or chancre, or else as a constitutional one, under that of a confirmed lues venerea.

Between a local and a constitutional affection there are however certain appearances, which are apt to take place in the absorbent vessels and glands nearest in situation to the parts affected with ulceration, and produced, no doubt, by the passage of the venereal matter through them. When the former become affected, a hard, red, inflamed line, somewhat similar to a cord, may be felt running all along the back of the penis; and when the latter are affected, which more usually happens, an induration, swelling, and inflammation of the glands themselves will take place, and a bubo will be the consequence. As, in most instances, the matter is applied first to the parts of generation, in consequence of an intercourse between the sexes; so, of course, the glands of the groins are most usually the seat of this symptom.

By a gonorrhœa virulenta, or clap, is to be understood a secretion and discharge of matter from the mucous membrane, and glands of the urethra, in consequence of an application of syphilitic matter to them. By a chancre is meant a venereal ulcer, the nature of which is to be much inflamed, to be very painful and sore, to be unequal at the bottom, to have prominent edges of an ash colour, and to shew no kind of disposition whatever to heal when left to itself, but, on the contrary, to spread very much; and by a lues venerea is implied an affection of the whole habit and mass of fluids, in consequence of an absorption of the poison into the constitution, which produces certain effects on various parts of the body, while diffused in the circulation.

Although a gonorrhœa and a chancre are both of them local affections on their first appearance, still there is this material difference between them, that as, in the first, there is a formation of matter without any breach in the solids, and in the latter there is always a breach, so the first may go on for some time without degenerating into an affection of the whole system, and may at last effect its own cure; whereas the latter is never attended with this happy effect; but, on the contrary, affords great reason to fear, that in those cases where the virus is not corrected by a timely use of proper antidotes, an absorption of the matter will take place, and in due time give rise to a confirmed lues.

In mentioning this distinction between a clap and a chancre, I wish not, however, to be understood to mean, that the former never termi-

nates in, or occasions a taint of the whole system. In some cases, where a gonorrhœa has been of long standing, it has been attended with this effect, owing most probably to the formation of some little ulcer in the urethra; not but that I conceive it possible for absorption to take place without ulceration. The application of venereal matter for any considerable length of time, to a part that is of a soft and spungy nature, like the glans penis, may, in some instances, I apprehend, be productive of a constitutional taint, without the existence of any previous ulceration.

It has been disputed whether or not the matter secreted in a clap, is of a similar nature with that secreted from a chancre, and whether or not it is possible for a person labouring under the one or the other, to communicate to a healthy subject a different species of the disorder from that with which he is infected. That a gonorrhœa, chancre, and confirmed lues, all arose from the same original infection, may, I think, readily be admitted; and that the matter produced both in gonorrhœa and chancre is of the same nature, ought not to be doubted, as daily observation must convince those who are frequently consulted in venereal cases, and who have given themselves the trouble to investigate the nature of the complaint which the person laboured under, who propagated the infection, that the matter from a gonorrhœa may and often does give rise either to a clap, chancre, or confirmed lues, and that the matter secreted from a chancre will do the same. The event depends, most assuredly, on the state of the parts, and the constitution of the patient, together with other accidental circumstances at the time the poison is applied, and not on any difference in the nature of the matter secreted in the one or the other affection.

I am aware that the doctrine I have here supported, by no means accords with that which has been advanced by Mr. Benjamin Bell, and a few other modern practitioners of eminence; for these gentlemen consider gonorrhœa and lues as arising from different specific contagions. By the greater number of the profession, however, they are still considered as the same. When facts, supported by accurate experiments and observation, are brought forward to convince me that they are separate poisons, I shall be ready to adopt the new opinion, but not until then.

When a person labouring under the venereal disease forms a connexion with another who is free from it, and who happens to have any little excoriation, ulcer, or wound, about the parts of generation, it is probable, that if the poison is conveyed to the healthy subject, it will be most likely to shew itself under the form of a constitutional affection; as in this case the matter is applied so as readily to be absorbed into the system, in a manner similar to what happens in the small-pox; whereas if it is applied to a part that is spungy, or to a surface covered with a mucous membrane, and where neither excoriation, ulcer, nor any wound exists, then the most probable consequence will be either a gonorrhœa or chancre.

In offering this as my opinion, I wish not to be understood that I mean to assert, this will invariably be the case. Much (as has already

been observed) will depend on the state and irritability of the parts at the time the poison is applied, as also on the habit of the person, and other accidental circumstances.

Another remark which may be added on the nature of the venereal poison is, that there seems to prevail in some constitutions a greater liability to be infected by it, than in others, as two men having been connected with a diseased woman, within a very short space of time, one of them shall contract infection from her, and the other shall escape with impunity.

Of Gonorrhœa Virulenta.*

No certain rule can be laid down with regard to the time that a clap will take before it makes its appearance after infection has been conveyed. With some persons it will shew itself in the course of three or four days; while with others there will not be the least appearance of it before the expiration of some weeks. It most usually is perceptible, however, in the space of from six to fourteen days, and in a male begins with an uneasiness about the parts of generation, such as an itching in the glans penis, and a soreness and tingling sensation along the whole course of the urethra; soon after which, the person perceives an appearance of whitish matter at its orifice, and also some degree of pungency on making water.

In the course of a few days the discharge of matter will increase considerably, will assume most probably a greenish or yellowish hue, and will become thinner, and lose its adhesiveness; the parts will also be occupied with some degree of redness and inflammation; in consequence of which, the glans will put on the appearance of a ripe cherry, the stream of urine will be smaller than usual, owing to the canal being made narrower by the inflamed state of its internal membrane, and a considerable degree of pain and scalding heat will be experienced on every attempt to make water.

Where the inflammation prevails in a very high degree, it prevents the extension of the urethra on the taking place of any erection, so that the penis is at that time curved downwards with great pain, which is much increased if attempted to be raised towards the belly, and the stimulus occasions it often to be erected, particularly when the patient is warm in bed, and so deprives him of sleep, producing in some cases an involuntary emission of semen. The above symptoms denote the presence of a chordee.

In consequence of the inflammation it sometimes happens, that at the time of making water, owing to the rupture of some small blood-vessel, a slight hemorrhage ensues, and a small quantity of blood is voided. In consequence of inflammation, the prepuce likewise becomes often so

* This diseafe belongs to Clafs IV. Locales, Order IV. Apocenofes, in the fyftematic arrangement of Dr. Cullen; but I have judged it preferable not to feparate the varieties of fyphilis from each other.

swelled at the end, that it cannot be drawn back; which symptom is called a phymosis: or that, being drawn behind the glans, it cannot be returned; which is known by the name of a paraphymosis. Now and then, from the same cause, little hard swellings arise on the lower surface of the penis, along the course of the urethra; and these perhaps suppurate, and form into fistulous sores.

The adjacent parts sympathizing with those already affected, the bladder becomes irritable, and incapable of retaining the urine for any length of time, which gives the patient a frequent inclination to make water, and he feels an uneasiness about the scrotum, perinæum, and fundament. Moreover, the glands of the groin grow indurated and enlarged, or perhaps the testicles become swelled and inflamed; in consequence of which, he experiences excruciating pains, extending from the seat of the complaint up into the small of the back, he gets hot and restless, and a small symptomatic fever arises.

Where the parts are not occupied by much inflammation, few or none of the last-mentioned symptoms will arise, and only a discharge, with a slight heat or scalding in making water, will prevail.

In consequence of the inflammation of gonorrhœa extending along the urethra, it sometimes happens that the mucous membrane of the bladder becomes thickened, indurated, and ulcerated, and pours out a considerable quantity of muco-purulent matter, which added to the urine, gives to it the appearance of whey.

If a gonorrhœa is neither irritated by any irregularity of the patient, nor prolonged by the want of timely and proper assistance, then in the course of about a fortnight or three weeks, the discharge, from having been thin and discoloured at first, will become thick, white, and of a ropy consistence, and from having gradually begun to diminish in quantity, will at last cease entirely, together with every inflammatory symptom whatever: whereas, on the contrary, if the patient has led a life of intemperance and sensuality, has partaken freely of the bottle and high-seasoned meats, and has at the same time neglected to pursue the necessary means, it may then continue for many weeks or months, and on going off, may leave a weakness or gleet behind it, besides being accompanied with the risk of giving rise, at some distant period, to a constitutional affection, especially if there has been a neglect of proper cleanliness; for where venereal matter has been suffered to lodge between the prepuce and glans of the penis for any time, so as to have occasioned either excoriation or ulceration, there will always be danger of its having been absorbed.

Another risk arising from the long continuance of a gonorrhœa, especially if it has been attended with inflammatory symptoms, or has been of frequent recurrence, is the taking place of one or more strictures in the urethra. These are sure to occasion a considerable degree of difficulty as well as pain in making water, and, instead of its being discharged in a free and uninterrupted stream, it splits into two, or perhaps is voided drop by drop. Such affections become, from neglect, of a most serious and dangerous nature, as they not unfrequently block up the urethra, so as to induce a total suppression of urine.

Where a gonorrhœa has been of long standing, warty excrescences are likewise apt to arise about the parts of generation, owing to the matter falling and lodging thereon; and they not unfrequently prove both numerous and troublesome.

Having noticed every symptom which usually attends on gonorrhœa in the male sex, it will only be necessary to observe, that the same heat and soreness in making water, and the same discharge of discoloured mucous matter, together with a slight pain in walking, and an uneasiness in sitting, take place in females as in the former; but as the parts in women which are most apt to be affected by the venereal poison, are less complex in their nature, and fewer in number, than in men, so of course the former are not liable to many of the symptoms which the latter are; and from the urinary canal being much shorter, and of a more simple form in them than in men, they are seldom, if ever, incommoded by strictures.

With women it indeed often happens, that all the symptoms of a gonorrhœa are so very slight, that they experience no other inconvenience than the discharge, except perhaps immediately after menstruation, at which period it is no uncommon occurrence for them to perceive some degree of aggravation in the symptoms.

Women of a relaxed habit, and such as have had frequent miscarriages, are apt to be afflicted with a disease known by the name of fluor albus, which it is often difficult to distinguish from gonorrhœa virulenta, as the matter discharged in both is in many cases of the same colour and consistence. The surest way of forming a just conclusion, in instances of this nature, will be to draw it from an accurate investigation, both of the symptoms which are present, and those which have preceded the discharge; as likewise from the concurring circumstances, such as the character and mode of life of the person, and the probability there may be of her having had venereal infection conveyed to her by any connexion in which she may be engaged.

Not long ago it was generally supposed that gonorrhœa depended always upon ulcers in the urethra, producing a discharge of purulent matter; and such ulcers do indeed occur, in consequence of a high degree of inflammation and suppuration; but many dissections of persons who have died while labouring under a gonorrhœa, have clearly shewn that the disease may, and often does exist, without any ulceration in the urethra, so that the discharge which appears is usually that of a vitiated mucus, thrown out from the mucous follicles of the urethra. On opening this canal, in recent cases, it usually appears red and inflamed, its mucous glands are somewhat enlarged, and its cavity is filled with matter to within a small distance from its extremity. Where the disease has been of long continuance, its surface all along, even to the bladder, is generally found pale and relaxed, without any erosion.

In the cure of a gonorrhœa we are to be directed by the symptoms which are present, and by the state of the disease at the time that advice is applied for. If at the commencement of the complaint the patient should experience much pain, heat, and difficulty, in making water, together with other inflammatory symptoms, and he is at the same time of

a full plethoric habit, it may be advisable to have recourse to antiphlogistic means, as bleeding, keeping the body open with gentle purgatives, allaying irritation by means of sedative injections,* drinking copiously of mucilaginous diluting liquors, such as barley-water, linseed tea, or solutions of gum arabic in milk; making use of a very spare regimen; abstaining from all kinds of fermented and spirituous liquors, and avoiding exercise; but if an inflammatory diathesis does not exist, nor any great degree of ardor urinæ prevail, it then will be unnecessary to have recourse either to general bleeding from the system, or to purging.

Nitre is a medicine which is often employed where there is any heat of urine; but this is very erroneous, for it cannot fail to increase the pain in making water, by its stimulus on the excoriated or inflamed urethra.

In avoiding purging when not necessary, we are, however, to take care not to run into the opposite extreme, by suffering costiveness to prevail, as the lodgment of indurated fæces, as well as the voiding of them, might prove a stimulus to the urethra. In every stage of gonorrhœa it therefore will be advisable to keep the body perfectly open, by a regular use of some mild laxative,† that is not of an irritating or drastic nature.

Among the symptoms attendant on gonorrhœa, it has been mentioned that phymosis and paraphymosis are sometimes present. In such cases it will be necessary to have recourse to emollient fomentations, together with the application of poultices composed of linseed-meal, or crumbs of bread, mixed up with a solution of the cerussa acetata, or a sufficient quantity of the aqua lithargyri acetata composita with common water, which are to be laid on cold; and the patient is at the same time to keep as much as possible in a recumbent position;

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* ℞. Ol. Amygdal ℥iv.
Aq. Litharg. Acet. gutt. viij. M.
ft. Injectio.
Vel
℞. Aq. Fontan. ℥iv.
Tinct. Opii Vinos. gutt. xl. M.
Vel
℞. Aq. Litharg. gutt. xx.
— Rosæ ℥viij. M.
Vel
℞. Aq. Distillat. ℥iv.
Acid. Muriat. gutt. viij. M.
Vel
℞. Theæ Virid. Herb. ʒſs.
Aq. Fervent. ℥iv.
Col.
Vel
℞. Mucilag. Gum. Arab.
Ol. Olivæ ää ℥ij.
Tinct. Opii Vinos. gutt. l. M.
Vel
℞. Aq. Ammon. Acetat. ℥j.
— Fontan. ℥iv. M.

† ℞. Elect. e Senna ℥jſs.
Cryſtal. Tartar. ʒij.
Pulv. Jalapii ʒſs.
Syrup. Simp. q. s. M.
ft. Electuarium cujus ſumat Cochl. minim. j. mane et veſpere.
Vel
℞. Mannæ Optim. ℥j.
Kal. Tartariſat. ʒij.
Aq. Fervent. ℥ij.
Tinct. Jalap. gutt. xxx. M.
ft. Hauſtus.
Vel
℞. Magnes. Vitriolat. ℥ij.
Aq. Fervent. ℥vij.
Tinct. Sennæ C. ℥j. M.
Capiat Cochl. magna iv. pro dos.

or, if obliged to walk about, he should support the penis up to the belly, by means of a proper bandage. Where a high degree of inflammation accompanies either of these affections, it will be advisable, previous to adopting the foregoing steps, to make use of topical bleeding, by applying two or more leeches to the part, together with other antiphlogistic means. Where the inflammation runs high, and a considerable degree of stricture attends, the division of the prepuce may sometimes be necessary.

In phymosis, besides pursuing this plan, it will be right to inject, every now and then, a little warm milk and water between the prepuce and glans penis, for the purpose of washing off any matter that may have lodged there, and which, if suffered to remain for any length of time, might produce ulceration, and of course endanger a constitutional affection by its absorption.

Where a chordee attends, rubbing the parts with a strong solution of opium, or the tinctura opii, and keeping linen pledgets, dipped in the same, constantly applied (taking care to renew them, however, as often as they become warm,) will greatly tend to remove both the pain and the spasmodic contraction. The most certain method of preventing this unpleasant symptom, is to give the patient an opiate draught at bed-time, consisting of at least fifty or sixty drops of the tincture of opium in one ounce of camphorated mixture.

In consequence of the inflammation running high, and extending a considerable way up the urethra, a tumour sometimes forms in the perinæum. In this case we should endeavour to disperse it by means both of general and topical bleedings, but more particularly the latter; by the application of saturnine poultices, such as before mentioned; by frequently administering laxative medicines, and by making use of a very spare regimen. Rubbing mercurial ointment on the part has been advised in cases of this nature; but it is seldom attended with a good effect.

Where the inflammation shews no disposition to remit from adopting these means, but on the contrary seems to proceed with haste to a suppuration, the evacuation of the matter externally should be promoted, to prevent its making an opening into the urethra.

Sometimes the bladder becomes affected in consequence of the inflammation extending to it; in which case the patient is troubled with a frequent inclination to make water, without the ability of voiding it, together with pain in the organ itself, and a considerable degree of tension over the os pubis. To remove this affection, it will be necessary to have recourse to general bleedings, copious dilution, and emollient fomentations and clysters, &c. as advised under the head of Ischuria.

The tinctura nicotianæ administered in a little linseed-tea in doses of thirty drops, repeated twice or thrice a day, has proved an excellent remedy in dysuria arising in gonorrhœa, either from too early a use of astringent injections, or any other cause.

It has already been mentioned, that in consequence of the inflammation of gonorrhœa extending along the urethra, the mucous membrane of the bladder sometimes becomes thickened, indurated, and ulcerated, so as to occasion it to pour out a considerable quantity of muco-purulent matter,

which, added to the urine, gives to it the appearance of whey; and moreover, that there is often a discharge of blood also. An obstinate case of this nature is now under my care, and arose from an imprudent use of strong astringent injections, and an internal one of the tincture of cantharides.

The cure of this chronic species of inflammation is to be effected by injecting the bladder with emollient decoctions;* by the use of uva ursi taken in the dose of a drachm three times a day; by balsamics;† and by a regular course of soda-water.

The prostate gland as well as the bladder, is sometimes affected also in consequence of gonorrhœa, and an inflammation arises in it, which is known by a pain and heat in the perinæum extending into the rectum, but more certainly by the introduction of the finger in ano. To obviate this, we should make use of topical bleedings, by the application of several leeches to the perinæum, together with emollient fomentations and poultices, and we should keep the patient's body open with laxative medicines and clysters. Where there is great pain and irritation, we may employ anodynes, both by the mouth, and by adding them to the clysters.

Where a morbid condition of the prostate gland appears to be dependant on scrofula, the cure must be attempted by the use of cicuta, bark, muriate of barytes, burnt sponge, prepared natron, and sea-bathing. In these cases, we are told by Mr. Hunter, than an issue or seton in the perinæum has proved very advantageous.

If our means prove ineffectual, and a scirrhous of the prostate gland ensues, the disease should be considered as hardly admitting of a cure. When ulceration takes place, the case becomes deplorable. The frequent application of leeches and inunction with mercurial ointment, together with gentle laxatives, regular hours, great temperance, and a strict abstinence from all heating food and liquors, and from severe exercise, but more particularly on horseback, may keep a scirrhosity of the prostate stationary for a considerable time. Hyoscyamus, or the extract of cicuta, given in as large doses as can be borne without giddiness, may also assist these means; but in the ulcerated stage, little more can be

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* ℞. Amyli ʒij.
Aq. Fervent. ℥v.
Tinct. Opii Vinos. ʒj. M.
ft. Injectio.

Vel

℞. Aq. Calcis ℥iv.
Ol. Lini Recent. ℥fs.
Aq. Lithargyr. Acetat. ʒfs. M.

† ℞. Bals. Canadenſis
—— Copaib. ää ʒj.
Sacchar. Alb. ℥fs. M.
Dein adde paulatim
Aq. Diſtillat. ʒviij.
Tinct. Opii gutt. xxx. M.
ft. Emulſio de quo ſumat æger Cochlearia tria magna ter in die.

Vel

℞. Terebinth. de Chio gr. iij.
Saponis Hiſpanic. gr. v.
Pulv. Gentian. q. s. M.
Fiant Pilulæ iij. ter in die ſumendæ.

Vel

℞. Succi Cicutæ Spiſſat. gr. ij.
Reſin. Flavæ gr. vj.
Bals. Copaib. q. s. M.
Fiant Pilulæ iij. ter in die capiendæ.

done than to abate pain and procure rest by sufficient and repeated doses of opium: and besides giving it internally we may also employ it in the form of injection, or introduce it in substance into the rectum by means of a bougie. As a mean of temporary relief, a warm bath may be frequently used.

An enlargement or scirrhosity of the prostate gland frequently arises however from other causes besides a gonorrhœa, and indeed is a disease with which men advanced in life are very apt to be afflicted, but particularly those who imprudently produce an excitement in the seminal vessels by artificial means. It is therefore to be frequently met with in those who addict themselves to a certain vice. From various dissections made by Mr. Everard Home,* it appears, that when the prostate gland becomes diseased, it is not its body or lateral portions which are principally enlarged, but it is a small lobe of it, or nipple-like process, and that this becoming gradually of an increased size, protrudes forwards towards the cavity of the bladder, blocks up the urethra, and so produces a difficulty of making water, with other distressing symptoms.

In those deplorable cases where a total suppression of urine arises from this cause, and we are obliged to resort to an operation from an inability of drawing it off either by a catheter or hollow bougie, I think we should puncture the bladder above the pubes in preference to any other mode.

It seldom happens that a hemorrhage of any consequence takes place in gonorrhœa; but when there does, it is to be suppressed by injecting sedatives and astringents into the urethra, such as a solution of cerussa acetata, or zincum vitriolatum, in rose-water; by the application of pledgets dipped in the same, externally, and by keeping the body at rest. Where these means prove insufficient to stop the hemorrhage, we must apply a sufficient pressure.

Practitioners who aim at popularity, by endeavouring to make hasty cures of gonorrhœa, are much in the habit of employing astringent injections on its first appearance. A frequent consequence, however, of this mode of practice is, that although the discharge is, perhaps, speedily suppressed, the person is soon afterwards attacked with an inflammation and swelling in one or both of the testicles.

Such a consequence being observed too frequently to arise from this treatment, it seems proper to notice, that, previous to a use of astringent injections, we should take care to remove every inflammatory symptom whatever, by a strict pursuance of the antiphlogistic plan; and that, in employing them after we have effected this, we ought to make them only of a moderate degree of astringency at first.

During the inflammatory stage it will be most proper to employ those of a sedative nature, as before advised; but on its going off, any of the astringent ones† here recommended may be substituted.

* See Philosophical Tranfactions for 1806, Part 1ſt, Art. 8th.

† ℞. Zinc. Vitriolat. ℈j.
Aq. Roſæ ℥viij. M.
ſt. Injectio.

Vel
℞. Cerufs. Acetat. gr. xv.
Zinc. Vitriolat. gr. x.
Aq. Diſtillat. ℥vj. M.

Vel

An injection of vitriolated zinc in the proportion of about a grain or two to each ounce of water, though, perhaps, one of the most active and successful of any we usually recommend, is apt in persons of an irritable habit to produce occasionally, great pain, an increase of the discharge, and a peculiar liability to swelling of the testicles. Under such circumstances, we are informed by Mr. Henry,* that he was induced to make trial of an injection, composed of eight or ten grains of the acetite of zinc, dissolved in four or six ounces of water, or of a thin mucilage of quince-seeds, or a decoction of linseed or of barley, the success of which exceeded his expectations, and far surpassed that of any, the use of which he had ever witnessed.

The following is one of the methods advised for preparing the acetite of zinc: To a solution of zincum vitriolatum in six or eight times its weight in water, add a solution of the acetite of lead (cerussa acetata) in twice its weight of water, as long as any precipitation ensues, or a little longer, in order to ensure the complete decomposition of the vitriolated zinc; throw the whole upon a linen strainer, and wash off the soluble part by repeated affusions of distilled water, then evaporate and crystallize.

Some surgeons are much in the habit of employing injections of a mercurial nature; but in recent cases, and during the inflammatory stage of gonorrhœa, they are equally as improper as those of the astringent kind. When the inflammation has somewhat abated, and the discharge still continues in a virulent form, as likewise in those cases where there is reason to suspect that there are ulcerations in the urethra, mercurial injections† will be likely to be attended with a very good effect.

There are a few who totally deny that gonorrhœa has a venereal origin; and there are others again, who contend that it is a peculiar species of the venereal disease; but at the same time they look on it as a local complaint, in which there is no danger of the system becoming

* See Medical and Physical Journal, vol. ix. p. 53.

Vel

℞. Aluminis Rup. ʒj.
Aq. Rosæ ʒvj. M.

Vel

℞. Vitriol. Cupri gr. viij.
Aq. Fontan. ℥viij.

Vel

℞. Æruginis gr. viij.
Ol. Olivæ ʒiv. M.

Vel

℞. Lap. Calam. Præpar. ℈ss.
Bals. Copaib. ℈ij.
Mucilag. Gum. Arab. ʒij.
Aq. Distillat. ʒiv. M.

Vel

℞. Bals. Copaib. ʒij.
Mucilag. Gum. Arab. ʒss.
Aq. Calcis ʒiv. M.

Vel

℞. Opii ℈ij.
Camphor. ʒss.
Zinc. Vitriolat.
Cerussæ Acetat. āā ℈j.
Aq. Bullient. ʒxvj. M.

† ℞. Hydrarg. Muriat. gr. ij.
Solv. in Spirit. Vin. Rectif. ʒij. et adde
Aq. Distillat. ʒviij.
Ammon. Muriat. gr. vj. M.

Vel

℞. Mucilag. Gum. Arab. ʒviij.
Calomel. ʒj.
Terantur simul in mortario.

affected by an absorption of the matter. They moreover regard it as a disease which will be sure to wear itself out, and at last effect its own cure, and therefore they neglect giving any medicine with the view of counteracting or destroying the syphilitic virus. The impropriety of proceeding in this manner, and the many injurious consequences which frequently result from it, must be too apparent to require my dwelling on them. Experience must have convinced the prudent surgeon, that in order to guard against any disagreeable consequences, and ensure a perfect cure, it will be advisable, in most cases of gonorrhœa, to make use of a proper quantity of mercury, in some shape or other.

In making this observation, I by no means wish to infer, however, that a clap can in no instance effectually be removed without mercury. In those cases where the disease is recent and perfectly mild, and where neither excoriation nor ulceration has taken place, it probably may continue a local affection, and at last effect its own cure; but as we cannot discriminate those cases in which the matter will not be absorbed into the system, from those in which it will, it appears to be the safest and most advisable plan to have recourse to mercury in all severe cases of gonorrhœa, as, by so doing, we shall guard against all unpleasant consequences, which, whenever they ensue from neglect, will be sure to hurt the practitioner in the esteem of his patient.

As soon, therefore, as we can procure an abatement of the inflammatory symptoms, we may begin with a use of mercury, as well as of astringent injections, regulating the dose according to the effect it produces. If we give the pilula ex hydrargyro, in preference to any other preparation of this medicine, we may begin with one consisting of about five grains every night, which is to be continued until either a coppery taste is perceived in the mouth, or the gums become slightly affected. On the event of either of these, the pill is to be taken only every second or third night, which will be sufficient to saturate the system, and effectually destroy the syphilitic virus.

If the pilula ex hydrargyro occasions a purging, we may substitute one composed of a combination of calomel and opium,* or of the hydrargyr. calcinatus,† as advised here, or directed in the treatment of confirmed lues. If these likewise purge, we must then have recourse to mercurial ointment, half a drachm of the strongest kind of which should be rubbed into the hams and groins every night, till the mouth becomes affected in either of the ways before mentioned. Whatever preparation of mercury we may employ, it ought by all means to be continued for some short time after the disappearance of every symptom, during the whole of which period the patient is cautiously to avoid any exposure to cold.

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* ℞. Calomel.
Camphor. āā ℈j.
Opii gr. xij.
Syrup. q. s. M.
fiant Pilul. xx. quarum fumat j. vel ij. mane et nocte quotidie.

† ℞. Hydrargyr. Calcinat. ℈j.
Opii gr. x.
Mel. Optim. q. s. M.
fiant Pilul. N. xx. Capiat j. vel ij. bis in die.

In the Contributions of Medical Knowledge, published by Dr. Beddoes, there is a curious paper by Mr. Addington, of West Bromwich, on the cure of gonorrhœa virulenta, by large doses of muriated mercury. Three grains of this are dissolved in an ounce of rectified spirit of wine; half of this solution is taken undiluted at going to bed; it produces a copious salivation for an hour and a half, or longer, during which, the patient spits a quart. Some Glauber's salts are to be taken on the second day after this operation, and on the evening of that day he is to repeat the draught, and the salts on the day but one following. Mr. Addington witnessed that three or four doses frequently removed a venereal gonorrhœa in a few days without any disagreeable consequence, and was informed that hundreds have been cured by it.

It will be difficult to account for the action of this medicine in any other way than by supposing it to be owing to the consent of parts between the throat and the urethra.

Upon the plan of diminishing the irritability of the system, as well as of the parts particularly affected, opium has been much used in gonorrhœa, not only by injecting a watery solution of it frequently up the urethra throughout the course of the day, but likewise by giving it by the mouth every night towards bed-time. This practice is certainly attended with very good effects, and ought therefore to be adopted more generally than it is.

In consequence of a sympathy of the parts affected, or the having imprudently used any severe exercise, or had too early recourse to strong astringent injections, it sometimes happens, that inflammation and swelling attack one of the testicles, shewing themselves at first, by a similar affection of the spermatic vessels and epididymis.

In these cases we must rigidly pursue an antiphlogistic mode of treatment, by bleeding from the system, where an inflammatory diathesis seems to prevail, and by topical bleeding by means of leeches where it does not; besides which, we should give the patient a brisk purge* every third or fourth day, and confine him to a very spare regimen, and to a recumbent posture.

To abate the swelling and inflammation, the parts may be bathed several times a day with some discutient embrocation,† and afterwards be covered with small pledgets dipped in the same, which are to be renewed as often as they become dry or warm. By night, a poultice of linseed or rye-meal, moistened with a solution of the cerussa acetata.

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* ℞. Pulv. Jalap. ʒfs.
Calomel. gr. v. M.
fr. Pulvis.

† ℞. Ammon. Muriat. ʒij.
Acet. Acerrim. ℥ij.
Spirit. Camphorat. ʒj.
Aq. Lithargyr. Acet. ʒfs. M.
Vel
℞. Aq. Ammon. Acetat.
Vel
℞. Aq. Ammon. Acetat.
Alkohol.
Aq. Distillat. āā ℥ij. M.
Vel
℞. Cerusſ. Acetat. ʒs.
Aq. Rosæ ℥iv.
Tinct. Opii. ʒij. M

may be kept to the part; but it is also to be applied cold; and in order that the testicles may not at any time hang by their own weight, the scrotum should be supported by a suspensory bandage.

During the continuance of the inflammation and swelling, it will be advisable to omit the use of mercury, and to employ in its stead cooling medicines, such as nitre;* and in order to allay irritation, we should give an opiate every night at bed-time.

Almost every case of inflamed testicle will terminate favourably, by paying proper attention to this plan; but when, either from improper treatment, neglect, or any untoward circumstance, a suppuration has ensued, the matter must be discharged by making an opening into the most dependent part of the abscess, and the remainder of the treatment must be the same as in collections of pus in other parts of the body.

Emetics have been much administered in inflammations of the testicle, but they seem to afford most relief in those cases where the swelling is unaccompanied by any hardness. The vitriol. cupri may be employed as advised under the head of Phthisis, when we judge vomiting to be proper.

Where a hardness remains after the inflammation and swelling have subsided, poultices of cicuta, and its use internally joined with the Peruvian bark, together with the application of mercurial unction every night, will be the most likely remedies to remove it.

The matter discharged in gonorrhœa, being in some instances of an acrid and virulent nature, is apt, by lodging between the prepuce and glans penis in men, and on the labia pudendi in women, to occasion an excoriation and ulceration in these parts. To prevent such consequences, it will be right to pay strict attention to cleanliness, by washing them at least twice a day. When they take place, we must employ lotions † of cerussa acetata, or the aqua lithargyri acetati, sufficiently diluted with water, suspending the penis at the same time to the abdomen, by means of a proper bandage.

Warty excrescences now and then appear about the external organs of generation in both sexes, as a consequence of gonorrhœa and chancres. They are of various sizes, appearance, and consistence, adhering sometimes by a narrow base and sometimes by a broad one. Wherever a ligature cannot be applied round them, from the broadness of their base, or

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* ℞. Kal. Præparat. ℥j.
Succ. Limon. ℥ſs.
Aq. Fontan. ℥j.
Nitri ℈j.
Vin. Antimon. gutt. x.
Syrup. Simple. ℥ij. M.
ft. Hauſtus ter de die ſumendus.

Vel

℞. Cryſtal. Tartar. ℥iij.
Kali Nitr. ℥ij. M.
et divid. in dos. x. quarum ſumat unam ter quaterve in die.

† ℞. Ceruſſæ Acetat. ℥ſs.
Aq. Diſtillat. ℥vj. M.

Vel

℞. Spirit. Camphorat. ℥ij.
Aq. Lithargyr. Acet. ℥j.
——— Diſtillat. ℔j. M.

their being very numerous, they may either be touched with caustic, or be destroyed by the frequent application of other stimulants, such as a solution of muriated mercury, sal ammoniac, or savine powder. This last has been found to succeed when all the other usual remedies have failed. It acts by producing a considerable discharge from the surface, by which the excrescence is gradually wasted without causing an eschar, like a caustic application. Moreover, it gives little or no pain, and is never productive of inflammation, which not unfrequently follows the use of either a solution of the muriate of mercury, or pure potash, or any of the potent caustics.

In consequence of inflammation, certain parts of the urethra are apt to become contracted, and to occasion strictures, which cause the urine, instead of flowing in a free and direct stream, to split into two, or to be voided drop by drop. The most usual way to remove these is, by a regular and long-continued use of a bougie; and were all such as are afflicted with these complaints, not to neglect this remedy, we should seldom, if ever, meet with those dreadful cases of suppressed urine which occur in practice.

In making use of bougies, it will, however, be necessary to attend to the following rules:

1st, To begin with one of a moderate size, and so to increase it very gradually; but previous to its introduction, I would recommend it to be held near a fire for a short time, so as to soften it, and then to bend it, in the shape of a catheter, so as to adapt it to the curvature of the urethra, by which means its passage will be greatly facilitated.

2dly, To employ no force in introducing it; but, where we meet with great resistance, to be content with merely suffering its point to press against the stricture, for a short time each day, with the hope that by a perseverance in this plan a dilatation of the contracted part may at last be effected.

3dly, To wear it at first, only for about half an hour, gradually increasing the time, as the parts can bear it without irritation.

4thly, Never to pass it into the bladder, except at first to ascertain the extent of the disease, but merely to carry its point some small distance beyond the stricture or strictures.

5thly, To guard against its slipping into the bladder, by bending its end, and tying it with a cotton thread fastened to the penis.

6thly, To avoid all exercise during its introduction; and

7thly, To continue its use for a considerable length of time after the disappearance of the stricture, and again to have recourse to it, on the least return of obstruction.

In those cases where a bougie even of the smallest size cannot be passed, as likewise in those which are of such long standing as to preclude the hope of a perfect recovery from its use, it has been proposed to make use of caustic. This was first advised by the late Mr. John Hunter, and since his time has been much urged by Mr. Everard Home. It appears from the report of this gentleman, that Mr. Hunter, fully sensible of the many inconveniences which attended the

application of caustic to strictures in the urethra, by means of a canula, as first practised, had, for some years previous to his death, adopted a more improved mode of applying it; and that he himself has continued to make use of it ever since, without having ever found it to be attended with disadvantage.

This improved mode of applying the caustic is thus managed: take a bougie, of a size that can readily be passed down to the stricture, and insert a small piece of lunar caustic into the end of it, letting the caustic be even with the surface, but surrounded every where laterally by the substance of the bougie. This should be done some little time before it is required to be used; for the materials of which the bougie is composed, become warm and soft by being handled, in inserting the caustic; and therefore the hold the bougie has of the caustic is rendered more secure after it has been allowed to cool and harden.

This bougie, so prepared, is to be oiled and made ready for use; but previous to passing it, a common bougie of the same size is to be introduced down to the stricture, to clear the canal, and to measure exactly the distance of the stricture from the external orifice; this distance being marked upon the armed bougie, it is to be passed down to the stricture, immediately upon withdrawing the other. When it is found in contact with the obstruction, it is to be steadily retained there, with a moderate degree of pressure at first, and less as it is longer continued, since the bougie becomes soft by remaining in the urethra, and readily bends if the pressure is too great.

The time it is to remain, must depend a good deal upon the sensations of the patient, and the length of time the parts have been diseased; but on the first trial, it should not be for more than a minute, as it then gives greater pain than on any future application. The pain produced by the caustic is not felt so immediately as it would be natural to expect: the first sensation arises from the pressure of the bougie on the stricture, a little after there is the feeling of heat, and then the parts become painful.

As soon as the caustic begins to act, the surgeon who applies it, is made sensible of it by the smaller arteries of the parts beating with unusual violence, which is very distinctly felt by the finger and thumb that grasp the penis.

After the caustic has been withdrawn, it is desirable that the patient should make water, as, in that way, any of the remains of the dissolved caustic are washed off; but it sometimes happens that no water will flow at the first effort. When that is the case, it should not be urged, as it is not of any great consequence.

It happens not unfrequently, that at the first time of making water, some blood passes along with it; this is also of no bad consequence, but is rather favourable; as when that has occurred, the stricture usually proves to be so far destroyed, that at the next trial the bougie passes on to the bladder. Every other day appears, in general, to be as often as it is prudent to apply the caustic.

By this mode of arming the bougie, strictures in the membranous

part of the urethra may have caustic applied to them, which cannot be done by a silver catheter, unless made flexible, and even in that state it is liable to many objections.

It appears that Mr. Hunter made use of caustic only in cases of impervious stricture; but Mr. Home, from a number of facts, thinks it established as a general principle, that the irritable state of a stricture is kept up, and even increased, by a use of the bougie, but lessened and entirely destroyed by the application of lunar caustic: hence he recommends the use of the caustic in many cases likewise of spasmodic stricture, in preference to the bougie. In speaking of the comparative effects of the bougie and caustic, he observes, that, from what he has seen, he thinks we may safely infer, that the caustic is a mode of cure more extensively useful, milder, quicker, more effectual, and more permanent than the bougie.

So general and indiscriminate a use of caustic, as is here recommended by Mr. Home, appears to me to be injudicious, and likely, in many instances, to be productive of injurious effects.

No doubt the caustic bougie may be, and often is applied to strictures without exciting any particular inconvenience or trouble, but still the application of so active a remedy to so delicate an organ, will sometimes give rise to disagreeable symptoms; and accordingly, during the employment of it, various circumstances will frequently occur to embarrass, or even disappoint our hopes of a cure. Most commonly the pain excited is not very acute, but occasionally it is severe, owing to a degree of inflammation and tenderness in the urethra, at the time the caustic is applied.

The best means to remove any unpleasant symptoms will be a light diet, rest, opiates, injections, cooling laxatives, and the warm bath. Should any suppression of urine be the consequence of the application of the caustic, the same means ought to be resorted to. Should a swelling of the testicle arise, it will be proper to desist from the remedy, and to employ the usual means for reducing this affection, such as topical bleeding with leeches, rest, an antiphlogistic regimen, cooling laxatives, and saturnine applications, with a suspension of the parts. But one of the most troublesome circumstances attending the employment of caustic for the cure of strictures, and which is apt more or less to embarrass the surgeon, and to alarm the patient, is a profuse hæmorrhagy. The quantity of blood lost is sometimes very considerable, and the hæmorrhage may return from time to time, for several days. Nothing, however, is to be apprehended from the quantity lost, except a temporary faintness and debility. To check its profuseness, we may employ cold applications, rest, internal astringents, and laxatives. Gentle pressure in the perinæum will frequently put a stop to the discharge, and in severe cases we can use some slight styptic injection, such as a solution of alum, or vitriolated zinc.

Where a paroxysm of fever attends the application of the caustic bougie, and the patient is seized with rigors, succeeded by heat and profuse sweating, as now and then occurs, the only treatment necessary is, the administration of a smart purge, followed, perhaps, by a full dose of

opium, and exciting and keeping up a free perspiration by the use of warm diluent drinks.

In very irritable habits, it might, probably, be a good plan to give a full dose of opium an hour or so previous to the application of caustic to the strictured parts.

The practice of applying caustic should, I think, be confined to such strictures of the urethra as are either utterly impervious, or so contracted as to be incapable of dilatation by the common bougie; for the urethra, even in its healthy state, being tender and irritable, and connected with parts of great importance in the system, all violent remedies ought to be applied to it with the greatest caution. The invariable rule to be followed, should be to endeavour to dilate all strictures by means of a common bougie before any attempt is made to effect their removal with caustic.

The bougie armed with caustic should be kept as a remedy of reserve, to be employed in those more difficult and complicated cases, in which the former has failed, or to which it is inapplicable. It must however be admitted, that the dilatation effected by the common bougie is seldom more than a temporary cure, particularly in strictures of long standing; for although the passage may be dilated sufficiently for the urine to pass, yet there remains the original tendency for contraction, which generally returns sooner or later on any exposure to cold, or act of intemperance.

Two other methods of applying caustic to strictures in the urethra, where such an application seems necessary, have been proposed, the one by Mr. Cartwright, and the other by Mr. Whately, and these were fully noticed in the first edition of this work; but as, after a fair trial, they have been found to possess no superior advantages over the method recommended by Mr. Home, and are more complicate, I have thought it unnecessary to give a particular detail of them here.

In a second tract more lately published by Mr. Whately on strictures in the urethra, he tells us that he has discovered a more efficacious, and at the same time a less hazardous and painful remedy for the disease in question than lunar caustic. It is the kali purum; and with this he directs a bougie to be properly armed, but much in the same manner as recommended by Mr. Home. This innovation has not however been considered by the best surgeons as an improvement; for whatever tends to weaken the action of the caustic, will at the same time destroy or lessen its effects on the stricture.

Caruncles and excrescences in the urethra sometimes arise as a consequence of gonorrhœa, but they are usually situated towards its extremity, and never any length within it. They are to be removed by the bougie and caustic, as well as strictures.

Where a spasmodic constriction of the urinary passage ensues in gonorrhœa (which is known by its suddenly taking place without any previous appearance of interruption, and its being as suddenly removed,) we must have recourse to emollient applications, such as fomenting with flannel cloths wrung out in a warm infusion of chamomile-flowers and bruised poppy-heads, and rubbing the penis with tinctura opii and æther combined. Where these fail, a warm bath, together

with the internal use of opium, in considerable doses, must be employed. Where the contraction will allow of a bougie being passed without much violence, it should always be done.

In suppressions of urine arising from spasm, it is observed under the head of Ischuria, that the profession is indebted to Mr. Cline for the discovery of a very efficacious remedy. This is the tinctura ferri muriati, which we are instructed to give in doses of ten drops, repeated every ten minutes, until some sensible effect is produced. After six doses the urine usually flows freely, the patient previously becoming a little sick and faint. As the tobacco clyster (see Colic) produces similar effects, it probably might be of service in cases of this nature, should other means fail.

In consequence of the repeated attacks of a gonorrhœa, and the debility of the part occasioned thereby, it not unfrequently happens, that a gleet or small discharge remains behind, after all danger of infection has ceased. In recent cases, the disease may, in general, easily be removed; but in those of long standing, where the mucous glands have suffered much relaxation, or where there is either a stricture or callosity, it may continue for life in spite of our best endeavours to cure it, having however certain intervals.

This is, nevertheless, to be attempted by a frequent use of astringent injections, and even by those of a stimulant nature, as acrid solutions of sal ammoniac, mercury, tincture of cantharides, verdegris, balsam of copaiva, &c.,* employing the last class more seldom however than the former; as likewise by forming an issue, or putting a seton in or near the perinæum, thereby diverting the discharge elsewhere. Besides using injections, we may employ remedies internally.† To give vigour to the whole system, and restore the tone of the parts at the same time, the patient should enter on a course of chalybeates, as advised under the head of Dyspepsia, assisted by cold bathing, country air, and a restorative diet.

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* ℞. Hydrargyr. Muriat. gr. ij.
Ammon. Muriat. gr. x.
Aq. Diftillat. ℥x. M.
ft. Inject.

Vel

℞. Ærug. Æris. gr. x.
Ol. Olivæ ℥iv. M.
ft. Inject.

Vel

℞. Bals. Copaib. ʒij.
Mucilag. Gum. Arab. ℥j.
Aq. Calcis ℥v.
Tinct. Cantharid. gutt. viij. M.
ft. Inject.

† ℞. Bals. Copaib. ʒj.
Capiat. Cochl. min. bis terve in die paux. facch. albi.

Vel

℞. Tinct. Benzoes C. eodem modo.

Vel

℞. Terebinth. Vulg. ʒij.
Pulv. Rad. Rhabarb. ʒj. M.
Fiant Pilul. xxxvj. quarum sumat ij. vel iij. bis terve in die.

Vel

℞. Terebinth. Venet. ʒiij.
Calomel. ℈ss.
Pulv. Cinchon. ʒj. M.
Fiant Pilul. L. Capiat iij. vel iv. mane et veſpere.

Vel

℞. Zinc. Vitriolat. ʒij.
Terebinth. Vulg. q. s. M.
Fiant Pilulæ lx. quarum ſumat j. vel ij. mane et nocte.

Where scrofula is apparent, it is usual to administer hemlock combined with bark.

In every case where the disease is obstinate and stricture suspected, the introduction of a bougie will be proper to ascertain it, and when satisfied as to its real existence, we ought either to advise a perseverance in the use of bougies, or else to apply the caustic in the manner practised by Mr. Home.

Of Chancres.

THE second local form under which the syphilitic poison has been mentioned to shew itself, is that of a chancre: this is distinguished by a want of disposition to heal, a thickened base and circumscribed inflammation, with other characteristic marks already noticed.

The parts most apt to be affected with these ulcerations in men, are the prepuce, the frænum, and in the angle between the glands and body of the penis; and in women, about the nymphæ and clitoris; but in some instances they have extended into the vagina, and even so far up as the os uteri. Syphilitic matter, by being applied to other parts of the body covered with a mucous membrane, such as the lips, nostrils, &c. may give rise to chancres there also; but being most usually applied to the organs of generation, in consequence of an intercourse between the sexes, these are generally the seat of such ulcers.

A chancre makes its appearance either with a slight inflammation, which afterwards ulcerates; or there arises a small pimple or pustule filled with a transparent fluid, which soon breaks and forms into a spreading ulcer. The period at which it makes its appearance after infection, is very various, being most commonly in five or six days, but in some cases not till after the expiration of as many weeks.

As there is always a risk that an absorption of matter may take place from a chancre, and that possibly very speedily, it will not only be necessary to attend to the ulcer, but likewise to secure the constitution by a use of such remedies as are well known to possess the power of counteracting the syphilitic poison.

In cases of a very recent nature, chancres may often be removed by the application of caustic, or by washing them with a weak solution of muriated quicksilver in spirit of wine; but where they are extensive, and have been of some standing, it will be necessary to dress them daily with ointments composed of hydrargyrus nitratus ruber, calomel, &c. spread upon fine lint. When much pain and irritation prevail, opiates will have a good effect.

In some cases of obstinate chancres of an inveterate and corroding nature, which have not benefited by the dressings just advised, much advantage has been derived from the application of a poultice composed of the inner soft part of a loaf of wheaten bread, moistened with a solution of the sulphate of soda in boiling water, in the proportion of one ounce of the former, to four pounds of the latter.

To give chancres a disposition to heal kindly, it will be highly necessary to attend strictly to cleanliness. Mr. John Hunter, in his treatise on the venereal Disease, seems however to have thought this unnecessary; for he says he is inclined to believe that no matter of whatever kind can produce any effect on the part that formed it; neither can the matter of any sore, let it be what it will, ever do hurt to that sore; and from thence he draws the conclusion, that the wiping or washing away matter under the idea of keeping the parts clean, is in every case absurd.

Where chancres exist along with phymosis, the cure will be both tedious and uncertain, and cannot often be effected by simply throwing up injections of a cleansing nature from time to time, between the prepuce and glans. The more certain method will be, to make an incision through the former, or to perform the operation of circumcision.

Chancres sometimes appear on the nipples of women who suckle infected children, and excite much pain. To lessen the irritability of the parts that are diseased, it will be proper to bathe the ulcers twice or thrice a day with a strong solution of opium in water, and afterwards to dress them with spermaceti ointment, to which a proper quantity of calomel has been added.

Besides topical applications, it will be necessary to secure the constitution from becoming affected at some after period, in consequence of an absorption of the matter from the ulcers, by having recourse to mercury, which must be used either externally or internally, as shall be found most suitable to the constitution and convenience of the patient. In employing it, we are, however, to avoid exciting any degree of salivation, and therefore we are to introduce it gradually into the system, carefully watching its effects. The length of time it ought to be used, will depend on the virulence of the disease and other accidental circumstances; but at any rate, we should never totally desist from its use, until the expiration of several days after the disappearance of the ulcers.

In phagedenic chancres which spread rapidly, no mercury should be given. The applications to the part ought to be of the most mild, soothing kind; and as internal medicines, the bark, opium, and cicuta, may be the most proper, while the sloughing continues.

A peculiar eruptive disease arising from the exhibition of mercury, has lately attracted the attention of some practitioners in Ireland;* and although of frequent occurrence, no doubt, in the London hospitals, it does not appear to have been particularly noticed by any surgeon belonging thereto, except by Mr. Pearson.† Mr. Benjamin Bell, indeed, in his Treatise on the Venereal Disease, very accurately describes it,‡ although, from the manner in which he speaks of it, the cases he had seen could not have been of a severe nature.

* See a Defcription of the mercurial Lepra, by Dr. Moriarty; and an Eſſay on a peculiar eruptive Diſeaſe ariſing from the Uſe of Mercury, by George Alley.

† See Obſervations on the Cure of Lues Venerea.

‡ —his Treatiſe on Gonorrhœa Virulenta and Lues Venerea, vol. ii. p. 288.

The disease is generally supposed to be produced by exposure to cold, while the system is under the influence of mercury; yet as its occurrence is infinitely too rare to be the necessary consequence of so common a cause, probably a peculiarity of constitution may be necessary for its production. It seems nearly allied to the genus Erysipelas, and has by some been named the Erythema Mercuriale.

This complaint sometimes shews itself by a heat and itching about the scrotum, and the upper and inner parts of the thighs, which, on examination, appear faintly red, and are somewhat rough. On other occasions, the heat, redness, and roughness, are first to be observed in the groins, and at the bend of the arms. In most cases, the anterior parts of the body are affected before the posterior, and the lower extremities suffer prior to its appearance on the trunk of the body; yet there is not so much of constancy and regularity in the order in which it proceeds, that the upper extremities are not occasionally attacked as early as the thighs. The redness, beginning on the extremities, makes a slow and gradual progress over the whole body, no part being exempted from it. Its increase is attended with great tenderness of the skin, a troublesome itching, and an evident tumefaction of the parts affected. The swelling is not unlike that which attends the erysipelas, and it has been as considerable as that which accompanies the small-pox. The temperature of the skin is increased, the tongue is white, and the pulse frequent; but neither the functions of the stomach nor of the sensorium commune are evidently disturbed by this complaint.

The lepra mercurialis is always a vesicular disease, although the vesicles which contain a pellucid fluid are at first appearance so small that they cannot easily be distinguished from papulæ without the aid of a convex glass: they are then seen to be distinct, each vesicle surrounded by a circle of redness, and if they are not ruptured at an early period, they acquire the size of a large pin head, at which time the contents are opaque. The rupture of the vesicle is succeeded by the discharge of a thin acrid fluid that irritates the surface which it touches, and greatly increases the patient's sufferings, and as the disease proceeds, he is excoriated almost from head to foot. The quantity of the discharge is in proportion to the extent of the excoriated surface; it is always considerable, and renders the linen which absorbs it, stiff and unyielding. As the fluid discharged becomes thicker and more adhesive, it emits an offensive scent similar to that which arises from the secretions of the sebaceous glands, when under the influence of disease.

As the lepra mercurialis does not invade the whole surface of the body at once, but occupies the different parts of it successively, so the several portions of the skin affected by it, exhibit a more or less advanced state of the disease at the same time: hence while the part first attacked is discharging the adhesive matter, the thin acrid fluid may be flowing from another portion. From this representation it must be obvious that the exact period observed by this disease cannot be easily ascertained; nor indeed does it appear to be limited by any regular term of duration. When it has affected but a small part of the body, it often terminates in

ten or twelve days; but when it has been universal, the patient seldom recovers completely in less than six, eight, or ten weeks.

When the discharge ceases, the loosened cuticle acquires first a pale brown colour, and then becomes nearly black, separating in large flakes, and leaving a faint redness on the exposed surface. The first desquamation is often succeeded by a second, or even a third; but in these latter desquamations, the cuticle is more of a white colour, and separates in farinaceous-like scales, so that the surface of the skin appears as if it were covered with a white powder. The effects of the lepra mercurialis are not however confined to the destruction of the epidermis. All the hair of the body, the beard, the hair under the axillæ, and on the regio pubis, and the greater part of the eyebrows and hair of the head, have been known to separate, and leave the parts as smooth as in a state of infancy. The disease ceases after a time, but it is doubtful whether any remedies have the power of interrupting its regular course or of abridging its duration.

The mode of treatment however which has been recommended, consists in desisting from the further use of mercury, and in employing such remedies as will serve to support the patient without increasing fever, and such topical applications as may lessen the irritation arising from the perpetual loss of skin. Keeping the bowels open with saline purges; exciting a gentle determination to the surface of the body by diaphoretics; allaying irritation by means of an opiate at night; and frequent warm bathing, will be proper in most cases. Where the disease assumes a putrid type, the Peruvian bark, with wine and some of the mineral acids, may be necessary. Starch, powder, or flour, will be the best topical applications.

We have hitherto been accustomed to look upon mercury as the only certain antidote against the venereal poison; but the nitric acid has lately been recommended as possessing a similar power. Mr. W. Scott, surgeon at Bombay, seems to be the first who employed it in syphilis. He tells us, he has had such extensive experience of its good effects, that he looks upon it to be by no means less effectual than mercury in removing that disease in all its forms, and in every stage of its continuance; and from its not producing many of the inconveniences that arise from a use of that metal, he thinks it may in some respects be preferable. He observes, that mercury introduced into the circulation, is attended by many disagreeable effects, that render it often necessary to give over its use before it has answered the desired intention; but that the nitric acid may be taken a long time, without any material injury to the health, and without producing inflammation and a flow of saliva, as from a use of mercury, but merely a temporary soreness in the gums and teeth.

On the recommendation of this gentleman, many practitioners have been induced to employ the nitric acid in the primary affections of syphilis, such as chancre, gonorrhœa, &c. and with some success. A few, however, have not made a favourable report of its effects; but more particularly Mr. Blair, surgeon to the Lock Hospital.

The nitric acid, at any rate, may assist the use of mercurials as well as opium in the cure of venereal ulcers, although it should not be solely depended upon.

A matter of much importance and worthy of notice, is, that the nitric acid has not been perceived to excite the action of other diseases, more especially scrofula, one of the greatest inconveniences attending a mercurial course, and by which many have had their constitution ruined, and others have lost their life.

The sensible effects generally produced by a use of this acid, are an increase of the appetite, costiveness, the mouth and tongue becoming moist and white, with a slight soreness in the gums, the urine being of a light straw colour, clear and increased in quantity; and the blood, when drawn, exhibiting the same appearances as under active inflammation, the coagulum being covered with a tough coat of coagulable lymph. In a few instances, a burning sensation in the stomach has been observed; but this has only happened where the dose has been too great.

The mode of administering the nitric acid is to give one drachm of it diluted in a quart of an infusion of lemon-peel in warm water every day; and where this quantity does not seem to produce the desired effect, to increase it gradually to two or more drachms.

A course of this medicine requires no particular regimen nor confinement.

Mr. Scott, it appears, has since used the nitric acid much diluted with water externally, as a warm bath, either partially or generally, with great success, at Bombay, in venereal cases.

Nitric acid is known to contain about four parts of vital air, united to one of azote, with a certain proportion of water, and is supposed to remove the symptoms of syphilis by oxygenating the body to a considerable degree, producing thereby a general increased action of the whole system.

Of a Bubo.

IT has already been observed, that between a local and a constitutional affection there often arises a kind of intermediate state, and that in consequence of an absorption of venereal matter from some surface to which it has been applied, the glands situated nearest to the parts thus affected, are apt to become indurated, swelled, and inflamed, and so to give rise to a bubo; and the parts of generation usually coming first in contact with the matter, so the glands in the groins are the most general seat of this particular symptom. In most cases, the syphilitic virus is absorbed from a chancre, or ulcer in the urethra; but instances have occurred, where a bubo has arisen without either gonorrhœa or any kind of ulceration, and where the matter appears to have been absorbed without any evident erosion of the skin or of the mucous membrane.

A bubo comes on with a pain in the groin, accompanied with some degree of hardness and swelling, and is at first about the size of a

kidney-bean, but continuing to increase, it at length becomes as large as an egg, occasions the person to experience some difficulty in walking, and is attended with a pulsation and throbbing in the tumour, and a great redness of the skin. In some cases the suppuration is quickly completed; in others it goes on very slow; and in others again, the inflammatory appearances go off without any formation of pus. In a few instances, the glands have been known to become scirrhous.

As many other swellings in the groin, such as a rupture, aneurism, lumbar abscess, and scirrhous affection of the glands, may be mistaken for a bubo, it will always be advisable, in doubtful cases, to inquire whether or not the patient has lately been afflicted either with a gonorrhœa or chancre; and whether or not he has lately laboured under any other complaint that might have given rise to the swelling. It may likewise be advisable to attend to the progress which the tumour has made. By a due consideration and investigation of these circumstances we cannot fail to form a just conclusion as to the real nature of the disease.

The following are the characteristics of a venereal bubo: the swelling is usually confined to one gland; the colour of the skin where inflammation prevails, is of a florid red; the pain is very acute; the progress from inflammation to suppuration and ulceration is generally very rapid; the suppuration is large in proportion to the size of the gland; and there is only one abscess.

A bubo is never attended with danger where the inflamed gland proceeds on regularly to suppuration; but in particular cases it acquires an indolence after coming to a certain length, arising from a scrofulous taint; or, by being combined with erysipelas, it terminates in phagedenic ulceration, and occasions a great loss of substance. This termination is however more frequently met with in hospitals than in private practice, and may partly be attributed to the contaminated state of the air of the wards wherein syphilitic patients are lodged.

The many inconveniences that ensue from allowing a venereal bubo to suppurate, should induce the practitioner to exert his utmost endeavours to prevent it from proceeding to such a state, and to occasion its speedy resolution, or dispersion, if possible. To effect this, it will be proper, where the skin is occupied by much redness and inflammation, and the tumour by a throbbing, to draw off a sufficient quantity of blood immediately from the neighbourhood of the inflamed part, during the first days of the disease, by means of four or five leeches; the patient at the same time keeping his body open with some gentle laxative, using a very spare diet, and avoiding exercise. After the leeches have ceased to bleed, the parts may be wetted frequently throughout the course of the day with linen pledgets dipped in any of the sedative embrocations advised for a swelling of the testicle, and by night be covered with a poultice of linseed or rye meal, moistened either with a diluted solution of cerussa acetata, or the aqua lithargyri composita.

If the tumour is unattended by any inflammatory symptoms, then topical bleeding may not be necessary, as probably the timely applica-

tion of mercurial ointment will be sufficient to disperse it. To give this its due and proper effect, it should not however be applied immediately upon the tumour, but be rubbed in on the inside of the thigh which is affected.

With regard to the quantity to be used, no express rule can be laid down, as some constitutions are readily affected by mercury, and others again are neither very quickly nor sensibly operated upon by it. In all cases it will be most advisable to begin with a small quantity of about the size of a hazel-nut, and so to increase it daily, until it comes to that of a moderate-sized walnut; which course is to be pursued every night, until the tumour and induration have entirely subsided. Indeed, if it is continued for some little time after the disappearance of both, it will be attended with the more certain effect.

Should the salivary glands become affected from a use of the unction, and any degree of salivation ensue, the patient ought immediately to discontinue it for some days, keeping his body open with gentle laxatives, and washing his mouth and throat frequently with a gargle composed of borax and honey,† dissolved in water. The borax will not only act as an astringent, but will diminish the irritable state of the glands, by its sedative power. To assist in lessening the irritation, it will be advisable, during a course of the unction, to give an opiate every night at bed-time.

If a bubo is too far advanced to be dispersed at the time that assistance is applied for, or obstinately continues its course to suppuration, in spite of our best endeavours to prevent it, we are then to assist the formation of proper pus by a full diet, and the application of emollient poultices. When this is formed, the tumour may be opened by a lancet or caustic, and the ulcer be brought to a proper digestion, by suitable dressings and the internal use of mercury, taking care, however, not to carry it to the extent of producing salivation.

In those cases where there prevails a scrofulous disposition, it frequently happens that the sore does not heal kindly, but, on the contrary, spreads from the glands to the cellular substance, inflames the skin and contiguous parts, assumes a foul, spongy appearance, and is accompanied by much pain and a discharge of an highly acrid matter; or should the ulceration heal in one part, it shortly afterwards breaks out in another, and becomes extensive.

Cases of this nature have been most successfully treated by fomenting the ulcerated parts twice a day with a strong decoction of the leaves of cicuta or of bruised poppy-heads, and then covering them with some emollient cataplasm, or that advised for chancres of a corroding nature. Where the ulcers have a fungous appearance, and discharge a thin acrid sanies, a little red precipitate may now and then be sprinkled over them,

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† ℞. Borac. ʒij.—℥fs.
Mel. Optim. ℥j.
Aq. Fervent. ℥viij. M.
ft. Gargarismus.

℞.
℞. Aluminis ʒij.
Decoct. Hord. ℔ij.
Mellis Rosæ ℥ij. M.

which will seldom fail to promote proper pus, and will by no means excite pain. As internal medicines, we may administer the bark of cinchona joined with the nitric acid, together with a decoction of mezereon, which may be taken in the quantity of a quart daily.

Opium has been much employed in these untoward cases, partly on the supposition of its being possessed of some specific power in the cure of syphilis; but its utility seems to depend entirely on its narcotic quality, and its allaying the pain and irritation with which such sores are uniformly accompanied, when the discharge is thin and acrid.

Cicuta has likewise been resorted to in these cases, and sometimes with advantage; it may therefore be taken internally. We may begin with about two grains of its extract in the form of a pill, and so increase the quantity daily, until it shews its effects on the system by producing a slight degree of giddiness.

Buboes in scrofulous habits, or when accompanied with erysipelatous inflammation, are very apt, particularly in hospitals where the air of the ward is much contaminated by many mercurial breaths, to degenerate into phagedenic ulcerations, which extend in a short time over a considerable space, and not unfrequently lay bare a large portion of the thigh and lower part of the abdomen. In cases of this nature the ulcerated parts should be well fomented two or three times a day with flannel cloths wrung out in a warm decoction of bruised poppy heads and the Peruvian bark, and afterwards be covered with an emollient poultice, and occasionally with the cataplasma carbonis mentioned under the head of Gangrene. The use of mercury should immediately be desisted from, employing in its stead large and frequently repeated doses of the bark of cinchona, together with opium, so as to keep up a constant effect.

The patient is at the same time to be supported with a generous diet and wine, and, if possible, to be removed into a purer air, without which our endeavours may not be crowned with success.

In all cases of bubo, as well as of chancre and gonorrhœa, where mercury is used either internally or externally, it will be necessary for the patient to abstain from food of a high-seasoned and salted nature, and from all kinds of spirituous and fermented liquors; and as any exposure to cold, while under a course of this medicine, is very apt to bring on a salivation, when it would not otherwise have arisen, he ought most carefully to avoid getting wet, or exposing himself to moist cold air, taking the precaution at the same time to adapt his clothing to the season of the year.

Of the Constitutional Disease.

A CONSTITUTIONAL taint is the third form under which it has been mentioned that the syphilitic poison is apt to shew itself, and which always arises in consequence of the matter being absorbed and carried into the circulating mass of fluids. The absorption of it may, however, take place in three ways:

1st, It may be carried into the circulation without producing any evident local effect on the part to which it was at first applied:

2dly, It may take place in consequence of some local affection, such as either gonorrhœa, chancre, or bubo: and,

3dly, It may ensue from an application of the matter to a common sore or wound, similar to what happens in inoculating for the small pox.

The most general way, however, in which a constitutional taint is produced, is by an absorption of the matter, either from a chancre or bubo.

When syphilitic matter gets into the system, some symptoms of it may often be observed in the course of six or eight weeks, or probably sooner; but in some cases it will continue in the circulating mass of fluids for a few months, before any visible effects are produced. The system being completely contaminated, it then occasions many local effects in different parts of the body, and shews itself under a variety of shapes, many of which put on the appearance of a distinct disease. We may presume that this variety depends wholly on the difference of constitution, the different kinds of parts affected, and the different state these parts were in, at the time the matter or poison was applied.

The first symptoms usually shew themselves on the skin, and in the mouth and throat. When the matter is secreted principally in the skin, reddish and brownish spots appear here and there on its surface, and eruptions of a copper colour are dispersed over different parts of the body, on the top of which there soon forms a thick scurf or scale. This scurf falls off after a short time, and is succeeded by another; and the same happening several times, and at length casting off deep, an ulcer is formed, which discharges an acrid fetid matter.

When the matter is secreted in the glands of the throat and mouth, the tongue will often be affected, so as to occasion a thickness of speech; and the tonsils, palate, and uvula, will become ulcerated, so as to produce a soreness and difficulty in swallowing, and likewise a hoarseness in the voice. In a venereal ulcer of the tonsil, a portion of its substance seems as if it was dug out; it is moreover very foul, and has a thick white matter adhering to it, which cannot be washed off. By these characteristic marks it may in general readily be distinguished from any other species of ulceration in these parts.

If the disease affects the eyes, obstinate inflammation, and sometimes ulceration, will also attack these organs.

The matter sometimes falls on deep-seated parts, such as the tendons, ligaments, and periosteum, and occasions hard, painful swellings to arise, known by the name of nodes.

When the disease is suffered to proceed, and is not counteracted by proper remedies, the patient will, in the course of time, be afflicted with severe pains, but more particularly in the night-time; his countenance will become sallow; his hair will fall off; he will lose his appetite, strength, and flesh; his rest will be much disturbed by night, and a small fever of the hectic kind will arise. The ulcers in the mouth and throat being likewise suffered to spread, and to occasion a caries of the bones

of the palate, an opening will be made from the mouth to the nose; and the cartilages and bones of the nose being at length corroded away, this will sink on a level with the face.

Some constitutions will bear up for a considerable time against the disease, while others again will soon sink under the general weakness and irritation produced by it. If the disorder is recent, and the constitution not impaired by other diseases, a perfect cure may easily be effected; but where it is of long standing, and accompanied with the symptoms of irritation which have been mentioned, the cure will prove tedious, and in many cases uncertain, as the constitution and strength of the patient may not admit of his going through a course of medicine sufficient to destroy the poison; or his health may be in such a state, as that only a very small quantity of mercury can be administered, even at considerable intervals.

The general appearances to be observed on dissections of those who die of lues, are caries of the bones, but more particularly those of the cranium, often communicating ulceration to the brain itself; together with enlargements and indurations of the lymphatic glands, scirrhus of several of the organs, particularly the liver and lungs, and exostosis of many of the hardest bones.

We have always been accustomed to consider mercury as the most certain antidote which we are acquainted with, to the syphilitic poison; from whence it is evident, that it will absolutely be necessary to have recourse to it, in all cases where the system becomes tainted.

The manner in which mercury removes the disease, is not yet satisfactorily ascertained; but in the opinion of some physicians, its action has been supposed to be chemical, the remedy combining with and destroying the virus; for it has been found, that venereal matter applied by inoculation, readily propagated chancre, but if mixed with a variety of mercurial preparations, no infection followed. The same effect of mercury over variolous matter, has been noticed under the head of Inoculation for the Small-pox.

A few who rank as regular practitioners, besides those who act as quacks, fully sensible of the credulity of mankind, have endeavoured to make the vulgar believe, that, by repeated examinations of the various productions of nature, they have each of them been able to discover a specific of a milder and more innocent nature than mercury for the venereal disease; and puffing handbills and advertisements daily announce that they can perform a radical cure without giving one grain of this mineral. A fair analysis of such of these nostrums as have been found at all serviceable in cases of this nature, has, however, clearly detected the falsity of these men's assertions, and proved, beyond a possibility of doubt, that their new-discovered specifics are but some active preparation of mercury, under a disguised shape.

Mercury may be introduced into the system in two ways, viz. either by an external application of it in the form of unction, or by giving some preparation of it internally; and it may be used to such an extent as to excite a salivation, or with such moderation, as only to give a tendency that way.

without suffering it to proceed so far, which, in all cases, will be the safest and most advisable plan. A third method, or alterative course, has been adopted by some practitioners; but although this may answer in primary affections, still it is by no means calculated to cure a confirmed lues.

There are some persons who are but little affected by mercury when applied externally to the body in the form of unction, as the absorbent vessels will not readily receive it; and there are others again whose internal absorbents will not take up a sufficient quantity, to produce much effect either on the disease, or the constitution; in which case the medicine passes off by the bowels, occasioning sickness at the stomach, and griping pains.

To administer mercury judiciously, it ought therefore to be used in the way that is most suitable to the constitution of the patient. If, on a trial, the external application of it should produce no effect, either on the disease or constitution, then it should be administered inwardly: on the other hand, if its internal use fails, or produces any disagreeable effect on the stomach and intestines, then the external application ought to be substituted. Indeed the skin not being so essential to life as the stomach, is capable of bearing the application of mercury to it, much better than the latter.

Although the quantity of mercury to be introduced into the system for the cure of a lues, must always be in proportion to the virulence of the disease, still, in throwing it in, we should neither proceed with haste or violence, nor administer it in large or too frequent doses. In all cases it will be most prudent to begin with a small quantity, whether given internally or applied externally, and to increase it gradually, so as that the system shall be inured imperceptibly to the remedy; and as soon as the patient perceives a copperish taste in his mouth, with a great fœtor of breath, and a more than ordinary secretion of saliva, he ought then to proceed cautiously, and, where necessary, wholly to desist from its use for a day or two, returning to it, however, as soon as these sensations have somewhat abated.

To use the medicine so as to give a tendency to salivation without proceeding any length, and to keep it constantly at that point, during the whole course, is what he is to aim at.

Mercury, when introduced hastily, and in large doses, into the constitution, is apt to produce sensible and disagreeable effects upon particular parts of the body. It often occasions a swelling and inflammation in the mouth, tongue, and salivary glands, and thereby produces a profuse salivation. It likewise affects the stomach and intestines, and excites nausea, griping pains, and diarrhœa; and in some instances it produces profuse sweats and great debility.

Introducing mercury into the system, so as to give rise to any of these effects, will therefore be highly improper. Unless the disease is proceeding so fast in its course, as that it might be attended with some risk to the patient, to wait until it was checked by introducing it gradually; or unless he is so irritable to the effects of mercury, as that even

the smallest quantity used internally, or applied externally, affects his mouth, it will be wrong to occasion a salivation, as the cure will always be rendered thereby more tedious, as well as uncertain, instead of being hastened.

To prevent a salivation, it will be necessary, besides beginning with small doses of mercury, and proceeding gradually, that the patient should take care not to stimulate the salivary glands, either by rubbing the skin over them, and keeping it too warm with flannel; or by applying any thing of a stimulating nature to the mouth; and he should likewise avoid as much as possible any exposure to cold; for this being applied while the body is in an irritable state from the use of mercury, is likewise apt to occasion inflammation and tumefaction of these glands, and so to give rise to a salivation.

The person who is under a course of mercury, should abstain from all salted and high-seasoned meats, confining his diet to plain animal food that is of light digestion, to thin broths, preparations of sago, barley, and rice, custards, light puddings, milk, vegetables, ripe fruits, &c. He should avoid all spirituous liquors and acids; and if he drinks wine, the quantity ought to be very small, and always diluted with a proper proportion of water.

The late Mr. John Hunter seems, however, to have thought an attention to diet, under such circumstances, wholly unnecessary; for in his Treatise on the Venereal Disease he says, that the manner of living under a mercurial course need not be altered from the common, because mercury has no action upon the disease, which is more favoured by one way of life than another; and he adds, "I see no reason why mercury should not cure the venereal disease, under any mode whatever of regimen." He asks what effect eating a hearty dinner, and drinking a bottle of wine after it, can have over the action of mercury upon a venereal sore, either to make it affect any part sensibly, as falling on the glands of the mouth, or prevent its effect on the venereal irritation? In answer thereto, I have only to say that a use of mercury never fails to render the body irritable; so any thing of a stimulating nature applied to the salivary glands while under a state of increased susceptibility and irritability, will be likely to occasion inflammation and tumefaction in these parts, and thereby provoke a salivation; an event which should ever be avoided, when it can possibly be dispensed with.

When we make use of unction for the cure of syphilis, without intending to excite a salivation, we may direct the patient to rub thoroughly into the hams and thighs, about half a drachm of the unguentum hydrargyri fortius, every night; and this course he is to continue, until a coppery taste is perceived in the mouth, with somewhat of an increase of saliva. As soon as these are perceptible, he must go on gradually, and should they seem to proceed to a greater height than what is intended, instead of using the ointment every night, he ought then to have recourse to it only every other night. On the contrary, should the quantity of ointment here directed, be insufficient to produce any apparent effect on the mouth, he must then increase it gradually every night, until he can attain the desired point.

If we employ mercury internally, with the same view of not bringing on a salivation, we may then give one or two of the pilulæ ex hydrargyro every night at bed-time ; or instead of these, we may recommend some of the other active preparations of mercury, such as calomel,* the hydrargyr. calcinatus,† or hydrargyr. muriatus,‡ which may be taken in small doses at first, and so be augmented gradually, as may be found necessary. Along with these remedies we may recommend the patient to drink about a quart a day of the decoctum sarsaparillæ compositum, which will tend to carry off the mercury by the skin and kidneys. Where any of its preparations affect the bowels, and excite either a purging or griping, a sufficient quantity of opium should be given at the same time to prevent these consequences.

When, from the urgent nature of the case, we are obliged to employ mercury so as to excite a salivation, we must introduce it into the system in a gradual manner, by beginning with a small quantity, and augmenting it daily, taking care to observe its effects with great attention. If we use unction (to which a preference ought always to be given where we mean to excite a salivation,) we may direct the patient to rub in, as has before been advised, about a drachm of it every night previous to his going to bed. If the salivary glands do not become affected after a few days application of the ointment, he can then increase the quantity each night, until a sufficient flow of saliva is procured.

During the continuance of the spitting, the pulse should never exceed 95 or 100 in a minute ; neither should the quantity of the saliva which is discharged, be greater than two or three pints in twenty-four hours. Under such a course, the body is to be enveloped in flannel, and the patient to drink plentifully of diluent liquors. To alleviate the soreness of his mouth and gums, he may use some soothing gargle § three or four times a day.

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* ℞. Calomel. ʒj.
Pulv. Opiat. ʒij.
Syrup. Simpl. q. s. M.
Fiant Pilul. lx. Capiat j. vel ij. pro dos.

Vel

℞. Calomel. ppt.
Camphor. āā ℈ij.
Opii gr. x.
Mel. Optim. q. s. M.
Fiant Pilul. No. xx. quarum sumat j. vel ij. mane et nocte quotidie.

Vel

℞. Calomel. ʒj.
Antimon. Tartarisat. gr. v.
Opii Purificat. ʒfs.
Mel. Optim. q. s. M.
Fiant Pilul. lx. Capiat ij. bis in die.

† ℞. Hydrargyr. Calcinat.
Opii
Camphoræ āā ʒj.
Syr. Simpl. q. s. M.
Fiant Pilul. lx. quarum sumat æger j. vel ij. omn. noct. hora decubitus.

‡ ℞. Hydrargyr. Muriat. gr. viij.
Spiritus Vinos. Ten. ℔j. Solv.
ft. Solut. cujus capiat Cochl. larg. j. mane et vespere.

Vel

℞. Hydrargyr. Muriat. Mit. gr. x.
Opii Purific. gr. v.
Conserv. Cort. Aurant. q. s.
Fiant Pilulæ xv. quarum detur una omni nocte.

§ ℞. Decoct. Hord. ℥vj.
Mel. Rosæ ʒj.
Tinct. Opii ʒj. M.
ft. Gargarismus.

If we give mercury internally, with the intention of exciting a salivation, we must proceed in the same cautious manner, increasing or diminishing the dose, according to the effect produced.

When a salivation comes on quicker, or proceeds with greater violence than we could wish, notwithstanding all our precautions, we must not only lessen the quantity of mercury, but we must also give one or two gentle purges, and keep the chamber somewhat cooler than before. Sulphur has generally been supposed to possess a power of checking the rapid effects of mercury; and therefore, where a salivation comes on with great rapidity and violence, we may have recourse to it in doses of from half a drachm to one drachm twice a day, besides taking the steps just mentioned.

In mild cases of syphilis it probably will require from four to six weeks perseverance in the use of mercury to effect a cure; but in cases of long standing, and a more confirmed nature, it may be necessary to continue it for eight or ten weeks, or even longer. Whether we attempt the cure by salivation, or in the milder way, by giving a tendency to it, without proceeding that length, we should always recommend the patient to persevere in the plan, even for some short time after the departure of the symptoms, in order that he may be ensured of a perfect cure; for the venereal action may to appearance be stopped, and the symptoms vanish, and yet all return again: the virus not having been completely subdued.

As soon as the use of mercury is left off, the diet may be amended, a purge or two be exhibited, and a return to the free air be gradually made; after which, tonics, with country air and exercise, will greatly tend to recruit the strength.

In the progress of the disease, it is often found necessary, besides employing mercury in order to counteract or destroy the virus in the system, to attend to particular symptoms; for the removal of which, a topical treatment may likewise be requisite. The tonsils, uvula, and other parts of the fauces, as likewise the nose, are frequently discovered in a state of ulceration, where the disease has been of long standing. In such cases, the parts should be well cleansed by washing them twice or thrice a day with some proper gargle;* after which, the fumes arising from myrrh and the hydrargyrus sulphuratus ruber thrown upon a hot iron, may be brought in contact with them by means of an inverted funnel.

When eruptions ulcerate, washing them with calomel and water, or the hydrargyrus muriatus and aqua calcis, and dressing them with mild mercurial ointment, will be most proper; making use, at the same time, of a decoction of mezereon-root, as advised in those cases where nodes arise.

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* ℞. Hydrarg. Muriat. gr. iij. Solve in
Spirit. Vin. Rectif. ℥fs. et adde
Decoct. Cinchon. ℥vj.
Tinct. Myrrh.
Mel. Rosæ āā ℥fs. M.
ft. Gargarifmus.

Venereal pains, blotches, and scaly eruptions will be removed most readily, by employing sudorifics at the same time with mercury. About a quart of the decoctum sarsaparillæ compositum, or of the Lisbon diet-drink,* the qualities of which have been the subject of so much encomium, may therefore be drunk daily with this view. In preparing this last, the powdered antimony and pumice-stone are to be tied in separate pieces of rag, and boiled along with the other ingredients. It is probable that the operation of these medicines, where the patient is not under a salivation, may be assisted by going into a warm bath now and then; but in having recourse to this remedy, the patient must observe the greatest precaution not to take cold, by wrapping himself up in very warm clothing on his coming out of the bath.

If the pains are so severe as to interrupt his rest by night, he should take an opiate† on going to bed.

Nodes on the bones are to be relieved by rubbing them every night with a small quantity of mercurial ointment, or by wearing a plaster of the same nature over them, assisted by a decoction of the woods, or mezereon,‡ together with opiates, where the pain is great.

In inveterate cases, where the surface of the bone becomes carious, it will be found necessary either to make an incision through the integuments and periosteum the whole length of the diseased part, or to apply a caustic to it for the purpose of procuring an exfoliation; but this last will require great caution and skill, and in applying it, some expertness will be requisite, to prevent it from spreading to a greater extent than what is intended, or may really be necessary.

When verrucæ arise, they should be either cut off, and afterwards be rubbed with the vitriol of copper, or else be touched with caustic, or some of the other remedies advised under the head of Gonorrhœa, in such affections.

Ophthalmia sometimes prevails as a consequence of syphilis, and requires a topical treatment. Where the eyes are much inflamed, it will be advisable to apply two or three leeches to each temple, and likewise to give one or two cooling purgatives. Should the inflammation and pain not abate, we may then apply a large blister to the back of the neck, or a small one behind each ear. Besides these means, the eyes may be bathed two or three times a day with some cooling collyrium, as advised under the head of Ophthalmia, and the irritation of

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* ℞. Sarsaparillæ Concis.
Rad. Chinæ āā ℥j.
Nucum Juglandis cortice siccatarum No. xx.
Antimonii ℥ij.
Lapid. Pumicis Pulv. ℥j.
Aq. Distillat. ℔x.
Coque ad dimidium.

† ℞. Aq. Ammon. Acetat. ℥ſs.
—— Menth. Sativ. ℥j.
Vin. Antimon. gutt. xxx.
Tinct. Opii gutt. xxxv.
Syr. Papav. Alb. ℥j. M.
ft. Hauſtus.

‡ ℞. Rad. Mezerei Contus. ℥ij.
—— Glycyrrhizæ ℥j.
Aq. Distillat. ℔ij.
Coque ad dimidium et col. Capiat ℔ſs. ad ℔j. in die

light be avoided either by confining the patient to a dark room, or obliging him to wear a large green shade over his eyes.

Where syphilis falls on the bones of the nose, besides making use of mercury, with the decoctum sarsaparillæ compos. or the Lisbon diet-drink, we should employ detergent lotions,* which may be applied to the parts by means of a syringe. When combined with ulcerations of the tonsils, palate, or uvula, we must likewise make use of fumigations and gargles, as before recommended.

In those cases where great debility is indicated, either by the general system, or by the appearance of ulcers of a phagedenic nature, we must omit the use of mercury for a time, and have recourse to the Peruvian bark, with wine, and a nutritive diet, removing the patient at the same time into a pure air, if his situation is any way close or confined. Occurrences of this nature happen more frequently in hospitals than in private practice, and are owing, in a great measure, to the vitiated air which prevails in the wards set apart for venereal patients.

Other remedies have been recommended, as possessing specific effects in syphilis, besides mercury. These are the oxygenated muriate of potash and the different acids, but more particularly the nitrous or nitric, which has been noticed in pointing out the proper treatment of chancres. It remains further to observe, that from the trials I have made of it, it appears to be well calculated to remove many of the primary symptoms of this disease, and may therefore be used in all such cases with safety, and most likely with the assurance of much advantage; but in a confirmed syphilis it ought never to be solely relied on. Its inefficacy in all such cases has been fully substantiated, not only by Mr. Blair,† but by various other practitioners of eminence. Many allow it, however, to possess a palliative power, and almost all admit its salutary effects in remedying the disordered state of the system, arising from the excessive use of mercury.

The lobelia, or blue cardinal, is another new remedy which of late has been recommended for the cure of syphilis; but its effects are by no means sufficiently established to place any great dependence upon it. It is given in the form of decoction,‡ the patient beginning with half a pint twice a-day. After some little time, the same quantity is to be taken four times a day, and to be continued so long as its purgative effect is not too considerable. When the case is otherwise, it is to be discontinued for three or four days, and then to be had recourse to again till the cure is completed.

The effects of this decoction are evidently purgative, as will be observed from what has just been mentioned.

† See his Essay on the Venereal Disease, Part II.

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* ℞. Hydrarg. Muriat. gr. iij. Solve in Spir. Vin. Ten. ℥fs. et adde Decoct. Cinchon. ℥vj. Tinct. Myrrh. ℥ij. Mel. Rosæ ℥fs. M. ft. Inject.

‡ ℞. Rad. Lobeliæ Syphilitic. Siccæ Manip. j. Aq. Distillat. ℔xij. Coque ad ℔viij.

Another new remedy is the decoctum astragali,* which has been very extensively used in Germany, and is said to possess powerful effects as an antisyphilitic. For a more particular account of its virtues I must beg leave to refer the reader to the London Medical Journal.

The decoctum dulcamaræ † is likewise another new remedy which is highly spoken of in anomalous diseases originating in lues venerea. The dose is half a pint in twenty-four hours, mixed with an equal quantity of milk.

The treatment of syphilis in infants is noticed among the other diseases to which they are subject.

Of the SIBBENS.

SIBBENS or sivvens is a disease which appears to be confined to the west of Scotland, and seems to have been first noticed by Dr. Gilchrist, who observes, that its spreading is chiefly owing to a neglect of cleanliness. From the report of others, we are informed that it is commonly got by drinking from the same cup, sleeping in the same bed, or handling the sores of such as labour under it.

The first appearances of the disease are usually to be observed in superficial ulcerations on the tonsils and uvula, together with an aphthous eruption in the inside of the mouth, cheeks, and lips. Sometimes a hoarseness attends this state of the parts, and excrescences, similar to a raspberry, arise from them. From these the name of Sibbens is derived.

Soon after the affection of the mouth has taken place, small pustules are to be discovered on the skin, which break after a time, and leave behind them a dry livid crust, beneath which, ulcers form that bear some resemblance to a chancre, as they spread more in depth than in breadth.

Instead of ulcerations, collections of matter in the form of boils, or critical abscesses, sometimes appear in different parts, which degenerate into sores of a superficial kind, discharging a thin acrid secretion. These are soon filled up with fungous excrescences, which shoot up in the form of a raspberry, like those of the mouth and throat.

It is seldom that the bones become affected in consequence of the sibbens; but in some cases, the gristly parts of the nose have suffered by erosion.

By the natives the disease has been supposed to have some connexion with the itch; by others it has been thought to bear a great affinity to syphilis; but undoubtedly it has a greater resemblance to the yaws than to any other disease whatever, and might possibly have been introduced into the west of Scotland by some persons from the coast of Africa or the West Indies, where the yaws is a very prevalent disorder, being, however, chiefly confined to negroes, mulattos, and others of a mixed race.

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* ℞. Rad. Astragal. Excapi ℥j. Aq. Fontan. ℔iij. Coq. ℔ij. Bibat. in die.

† ℞. Stipitum Dulcam. Recent. ℥ij. Aq. Fontan ℔iv. Coq. ad ℔ij. et Col.

Dr. Adams, in his Observations on Morbid Poisons, informs us that the sivvens is to be distinguished from lues, by the venereal ulcer being attended with a callous edge and base; whereas that of sivvens consists only of the clean phagedenic ulcer. Moreover the former retains much longer its copper appearance, and afterwards becomes more elevated, having more the colour of the skin, and the scab, when formed, more scaly. In sivvens, the appearance is very rarely pustular, and he never could detect pus under the cuticle; he therefore conceives pus still less in quantity than in syphilis. He adds, it is universally admitted that sivvens never attacks the bones, but by spreading from the soft parts, and that it yields earlier to mercury than syphilis.

Sibbens is to be cured exactly in the same manner as the yaws, both as to its topical and constitutional treatment.

Of the YAWS, or FRAMBŒSIA.

THIS is a very common disease among the negroes in our sugar-colonies, and imported, no doubt, originally from Africa. It never spreads by miasma floating in the air, but may be quickly propagated by cohabiting or otherwise coming in contact with such as are affected by it; hence although white people do not seem so susceptible of its influence as those of colour, they nevertheless sometimes become tainted.

It may likewise be communicated by the application of matter from a yaw pustule or sore, to a wound in a person who has not before had the disease; and it is no uncommon occurrence for negroes to inoculate themselves, with the view of obtaining a long exemption from labour. It is one of those complaints which affect the same person but once in his lifetime.

The yaws are sometimes preceded by pains in the limbs, which somewhat resemble those of rheumatism, and are particularly severe round the joints: these pains are attended with languor and debility, and frequently continue for many days, without any further appearance of disease. After a time these precursory symptoms are succeeded by a degree of pyrexia, sometimes attended with rigours, although, in other instances, the fever is slight and scarcely noticed.

For the most part the patient complains of head-ach, loss of appetite, and pains in the back and loins, which are rather exacerbated towards evening. When these symptoms have continued for a few days, they are followed by an eruption of pustules, more or less numerous, which appear in various parts of the body, but especially upon the forehead, face, neck, arm-pits, groins, pudenda, and round the anus. The eruption of these pustules is not completed over the whole body at one time, neither do they shew themselves in any regular succession on the different parts; but while one crop is falling off, a fresh one is making its appearance in another place. Every new eruption of pustules is usually preceded by a slight febrile paroxysm. On the first appearance of the pustules or pimples, they are not larger than a pin's head, but gradually increase until they attain the size of a sixpence, or even of a shilling. The pustules are

filled with an opaque whitish fluid, and when they burst, a thick viscid matter is discharged, which forms a foul and dense crust or scab upon the surface. From the larger kind of pustules there frequently arise red fungous excrescences of various magnitudes, from the size of a pea to that of a large mulberry, which fruit, owing to their rough granulated surfaces, they somewhat resemble. These fungi, though they rise considerably above the surface of the skin, have but a small degree of sensibility; they never suppurate kindly, but discharge a sordid glutinous fluid, which forms an ugly scab round the edges of the excrescence, and covers the upper part of it when much elevated, with a white slough. When these eruptions appear upon any part of the body covered with hair, the colour of this is gradually changed from black to white. In general the number and size of the pustules are proportioned to the degree of eruptive fever. When the febrile symptoms are slight, there are few pustules; but they are mostly of a larger size than when the complaint is more violent and extensive.

The duration of the yaws is very uncertain, but is generally supposed to depend a good deal on the habit of body at the time of receiving the infection.

In some cases they arrive at their full size and maturity in the space of four or five weeks; but in others, they have taken two or three months.

When no more pustules are thrown out, and when those already upon the skin no longer increase in size, the disease is supposed to have reached its height. About this time it happens on some part of the body or other, that one of the pustules becomes much larger than the rest, equalling the size of a half-crown piece; it assumes the appearance of an ulcer, and instead of being elevated above the skin like the others, it is somewhat depressed; the surface is foul and sloughy, and pours out an ill-conditioned ichor, which spreads very much by corroding the surrounding sound skin: this is what is called the master or mother yaw. If proper attention be not paid to keep the surface of the ulcer clean, the matter becomes very acrid, and when near a bone sometimes affects it with caries.

When the excrescences appear upon the soles of the feet, they are prevented from rising by the resistance of the thick hard epidermis, and give so much pain, that the person affected is unable to walk. The fungi thus situated are called by the negroes in the West Indies tubba, or crab yaws. They are sometimes so large as to cover a great part of the sole of the foot; at other times they are not larger than a shilling: like corns, they are frequently affected by different states of the atmosphere, but more particularly by rainy weather.

Where a judicious mode of treatment has been adopted, the yaws, although a very loathsome complaint, seldom proves either difficult or tedious of cure, and even in the worst of cases is never attended with immediate danger; but where the eruptions have been repelled into the system by external applications, or too early a use of mercury has been resorted to, the cure is often greatly protracted, and in some cases rendered uncertain. Where the disease has been suffered to pursue its course without any assistance, foul ulcers of a considerable extent are

apt to be formed, which induce great debility, and often occasion a caries of the bones.

Having clearly ascertained the disorder to be the yaws, the negro ought to be sent immediately to some very private part of the estate, where he can have no possible communication with such as never had it. This precaution is by no means sufficiently attended to, as those who labour under the disease are too frequently suffered to associate and mix in friendly intercourse with other negroes, by which means it is propagated from one to another, instead of being eradicated.

During the eruptive stage of the disease we are to assist the efforts of nature in determining the noxious matter to the surface of the body, by giving some mild diaphoretic,* which may be washed down with about half a pint of the decoct. sarsaparillæ compositum. With these remedies the patient should make use of a warm bath about twice a week, confining himself at the same time to a vegetable diet. He ought to be comfortably and warmly lodged, and his system be invigorated by taking exercise proportioned to his strength.

In the second stage of the disease, where the eruptions begin to dry off, it will be advisable to employ mercury, so as to produce an alterative effect. A weak solution of the hydrargyrus muriatus† is the medicine which I have found to answer best on this occasion; and in order to disguise its nauseous taste, it may be given in a little milk. The decoctum sarsaparillæ compos. may be used at the same time. Both are to be continued until the scabs become perfectly dry and fall off; at which period they are to be omitted, and then a few doses of sea-water, or some other gentle purgative, should be given. If the mouth becomes much affected by the mercury, its use must either be discontinued for a time, or the dose be lessened.

It has already been observed, that there usually remains one large eruption after all the rest have dried away; and this, by degenerating into a foul ulcer, discharges an ichorous matter. The best application for its cure is the unguentum hydrargyri nitrati.

From the thickness of the cuticle in the feet, when the yaws appear there, the discharge is apt to be confined. When they break, they are difficult to heal, often ulcerating the whole sole, and thereby rendering the person incapable of walking. A poultice of the fresh cassava-root, which is of the narcotic tribe, is the best application in such cases.

Hard swellings of a very painful nature, which do not suppurate, sometimes appear likewise in the soles of the feet, as a consequence of the

* ℞. Pulv. Contrayerv. gr. x.
Camphor. gr. iij.
Florum Sulph. gr. xv.—℥ss.
Syr. Simpl. q. s. M.
ft. Bolus mane et nocte sumendus.

Vel

℞. Pulv. Gum. Guaiac. ℈ss.
—— Antimonial. gr. ij.
Flor. Sulphur. gr. xv.—℥ss. M.
ft. Pulvis.

† ℞. Hydrargyr. Muriat. gr. iij.
Spirit. Vin. Ten. ℥vj. M.
Cochl. ampl. j. mane et vespere sumendum.

Vel

℞. Hydrargyr. Muriat. gr. xxv.
Spirit. Vin. Gal. ℥j.
Vin. Antimon.
Tinct. Opii ää. ℥j. M.
Capiat guttas xx.—xxx. mane et nocte quotidie

yaws, and occasion lameness. To remove them, the patient should bathe his feet in warm water until the swellings become somewhat soft; they then should be seared with a hot iron, which produces an eschar and sore that is readily healed by dressing it with some gentle escharotic.

Inoculation has been proposed for this disease, and probably it might be rendered thereby more mild in its symptoms, and quicker in its progress; but as many negroes pass through life without the yaws, and they never prove fatal when judiciously treated, it is not likely that the owners of West India estates will be ready to submit to the unnecessary loss of labour, which would be incurred by having recourse to the operation, the disease requiring in some cases many months to go through its regular course.

Of the ELEPHANTIASIS.

THIS disease evidently derives its name from the appearance which the leg and foot put on at an advanced period. The cells of the adipose membrane, which cover and connect the muscular fibres of these parts, seem to be its seat. In most instances, it is confined to one leg, but I have met with cases where both were affected.

Elephantiasis has generally been supposed to arise in consequence of some slight attack of fever, on the cessation of which, the morbid matter falls on the leg, and occasions a distention and tumefaction of the limb, which is afterwards overspread with uneven lumps and deep fissures. By some authors it has been considered as a species of leprosy; but it often subsists for many years without being accompanied with any of the symptoms which characterize that disease, as I have seen in many instances.

It sometimes comes on gradually without much previous indisposition, but more generally the person is seized with a coldness and shivering, pains in the head, back, and loins, and some degree of nausea. A slight fever then ensues, and a severe pain is felt in one of the inguinal glands, which after a short time becomes hard, swelled, and inflamed. No suppuration however ensues, but a red streak may be observed running down the thigh from the swelled gland to the leg, and along the course of the lymphatics. As the inflammation increases in the parts, the fever generally abates, and perhaps, after two or three days continuance, goes off. It however returns again at uncertain periods, leaving the leg at last greatly swelled with varicose turgid veins, the skin rough and rugged, and a thickened membrana cellulosa. Scales appear also on the surface, which do not fall off, but are enlarged by the increasing thickness of the membranes; uneven lumps, with deep fissures, are formed; and the leg and foot become at length of an enormous size, somewhat resembling in appearance those of an elephant.

A person may labour under this disease many years without finding much alteration in the general health, except during the continuance of the attacks; and perhaps the chief inconvenience he will experience, is the enormous bulky leg which he drags about with him. The incumbrance has indeed induced many who have laboured under the disease to

submit to an amputation; but the operation seldom proves a radical cure, as the other leg frequently becomes affected.

Dr. Hillary observes,* that he never saw both legs swelled at the same time. Instances where they have alike acquired a frightful and prodigious size, have, however, frequently fallen under my observation as well as that of other physicians.

From the report of a modern writer,† it appears that the inhabitants of Cochin, on the coast of Malabar, are very much afflicted with an enlargement and swelling of one leg, somewhat similar to elephantiasis; and as the disease is not to be met with in other parts of India, it has the appellation of the Cochin leg. The swelling is always confined to one leg, and reaches from the ankle to the knee; the dimensions of the leg in every part being so large as to equal, if not exceed, the thigh of the same person; but no inconvenience or pain is felt in walking.

A particular species of elephantiasis is said to be endemial in the island of Barbadoes. By Dr. Hendy‡ it has been denominated the glandular disease: he tells us that it is not incident to the inhabitants of the other West India Islands, and that a person who has suffered from it in Barbadoes may have fresh attacks of it if he remains there; but that by removing to any other place, he may be certain of preserving himself from any return of the disease. In this assertion Dr. Hendy is certainly mistaken, for I have met with it in both of the islands of St. Christopher's and Nevis. Moreover, a gentleman from the former of these islands, who came to Europe for the recovery of his health, in consequence of both his legs being affected with this species of glandular disease, has within a few months applied to me for advice; and although he has been in England nearly two years, and has consulted several of the faculty, still both limbs are very much enlarged, and but very little diminution of size has taken place.

By Dr. Hendy we are informed that the disease is truly characterized by the appearances it produces on the lymphatic system. These are almost universally a certain cord, which is hard or red (often both,) extending in the ordinary direction of the lymphatic vessels towards the lymphatic gland. The part affected swells, and puts on a shining and œdematous appearance; it does not, however, often pit to the touch, though strongly pressed with the finger, except only when the disease is recent; the effect of pressure is then the same as in cases of anasarca. The joint nearest to the affection becomes stiff and contracted in consequence of the neighbouring inflammation and swelling.

When the concomitant fever abates after a duration, which varies in different patients, it leaves the local swelling and inflammation, which continue for a few days afterwards. The swelling indeed seldom entirely subsides, particularly when the lower extremities are affected. There are some instances, however, in which these enlargements have totally disappeared.

The lymphatic gland has in several instances been left enlarged and

* See his Treatise on the Diseases of Barbadoes.
† See Parsons's Travels in Asia and Africa, p. 228.
‡ See his Treatise on the Glandular Disease of Barbadoes.

indurated. Sometimes the inflammation in the gland proceeds to suppuration. The inflammation that takes place in the lymphatic vessels is of the erysipelatous kind, and sometimes terminates in mortification. At other times, however, it resembles rheumatism, and in several instances abscesses have been formed in the cellular substance. Ulcers which are difficult to cure, are in some cases the consequence of these abscesses.

Dr. Hendy conceives that the lymphatic vessels being inflamed and obstructed, will be incapable of absorbing and transmitting the lymph deposited in the cellular membrane by the exhalant arteries; that an undue accumulation of this fluid in consequence taking place, the skin will be distended; that the great distention will crack the skin, and suffer the lymph to ooze through the fissures, and that this fluid drying occasions the scaly scabby appearances exhibited in those cases. He illustrates his opinion by an appeal to the late Mr. Hewson's experiments, by which we are taught that the lymph deposited in the cavities and vessels of an healthy animal, will always jelly on being exposed to the air.

The occasional cause of the disease is referred by Dr. Hendy chiefly to cold, and he considers the peculiar dryness of the atmosphere of Barbadoes, arising from its being cleared of woods, with which the other West-India islands abound, as the circumstance which renders the people of Barbadoes particularly liable to this complaint. What the real cause may be, I will not pretend to determine, but I think it may be owing more likely to some peculiarity in the waters of that island. The inhabitants of certain districts abounding with saline and mineral springs, are more frequently afflicted, we well know, with diseases of the glands in the neck, such as the goitre and Derbyshire neck, than persons residing in other situations.

Although there is some little difference in the appearance of the two species of elephantiasis here described, still both require the same mode of treatment.

Notwithstanding that the fever which precedes the inflammatory affection of the groin sometimes runs high, still it seldom will be necessary in elephantiasis, to have recourse to the lancet, in order to moderate it. Should any great degree of nausea prevail, it may be advisable to give an emetic; and after its operation, if the body should be costive, some gentle purgative may be administered.

To promote a moderate perspiration, the diaphoretics advised under the head of Simple Fever may be prescribed; to assist the effect of which, the patient should drink plentifully of warm diluting liquors. The parts affected are to be well fomented with cloths dipped in a warm infusion of emollient herbs, and afterwards be wrapped up in flannel.

When the fever goes off, the cinchona may be given with advantage; and it is probable that an issue put into the thigh might be serviceable.

If suitable means have been neglected on the first attack of the disease, and the leg has become much enlarged, with a scaly and irregular

surface, no cure can be expected. It is probable, however, that gentle alteratives,* with warm bathing, might somewhat retard its progress. The decoct. sarsaparilliæ, mezerei, or lobeliæ syphiliticæ (see Lues and Leprosy,) might also be used with advantage.

A case of elephantiasis reported by Mr. Ward of Manchester, in the 9th vol. of the Medical and Physical Journal, page 545, induces me to recommend a trial to be made of the effect of pressure. The best mode of applying it, is that advised by Mr. Baynton, in the cure of ulcers, and which is fully detailed in the treatment of these complaints; but previous to the application of the strips of adhesive plaster and bandage, it will be advisable to wash the tumefied parts very well with tepid water and soap at least two or three times a week.

It appears from some late accounts, that the Hindoo physicians use arsenic internally in the treatment of elephantiasis. They make it into pills with pepper in the following manner:

Take of white arsenic fine and fresh one part, of picked black pepper six parts.

Let both be very well beaten together for a considerable time in an iron mortar, and then reduced into an impalpable powder in one of stone, with a stone pestle; and thus completely levigated, a little water being mixed with them, make pills of them as large as tares or small pulse, and keep them dry in a shady place.

They direct one of these pills to be taken morning and evening, with some betel-leaf, or, in countries where this is not to be had, with cold water. If the body be cleansed from foulness and obstructions by gentle cathartics and bleeding, before the medicine is administered, the remedy, we are told, will act more speedily.

When an amputation of the diseased limb is submitted to, in consequence of the great incumbrance, a proper discharge should, for very obvious reasons, be promoted from the other leg by means of an issue, or from the end of the stump itself, provided the amputation has been made below the knee.

Of the LEPROSY, or LEPRA.

LEPROSY consists in an eruption of copper-coloured spots dispersed over various parts of the body, with some degree of insensibility in these, together with a glossy and scaly appearance of the skin, thickening of the lobes of the ears, falling off of the hair, hoarseness of the voice, offensiveness of the breath, and ulcerations in various parts.

Monsieur Sonnini informs us,† that the leprosy, whatever may be

† See his Travels through Egypt, p. 559.

* ℞. Sulph. Antimon. Præcipit. ℈ij.
Calomel. ℈j.
Pulv. Gum. Guaiac. ʒj.
Syrup. Simpl. q. s. M.
Fiant Pilulæ No. xxx. Capiat ij. vel iij. mane et nocte quotidie cum Decoct. Sarsaparil. Compos. ℔fs.

its nature, is not in Egypt considered as a contagious disease, and that lepers are not there, as in Turkey, secluded from society. The Egyptians take no precautions to preserve themselves from infection, nor do they consider that this indifference is attended with the smallest danger. In so doing, I must say they lie under a great error, for the disease is very readily propagated from one person to another by contact or cohabitation, as I have often witnessed during my residence in the West Indies.

He further mentions, that from a variety of observations it appears, that persons afflicted with the leprosy have ardent dispositions towards the physical instances of love; and he quotes an instance of a leper, who, on the very night of his death, was several times hurried away by the warmth of his temperament. He tells us, he has noticed at Canea, in the island of Candia, great numbers of lepers, both men and women, banished without the gates of the city in miserable hovels, where they abandoned themselves to the greatest excesses of voluptuous irritation. They were sometimes to be seen satisfying their disgusting and impetuous lust in open day, by the side of the roads leading to the town near which they lived; but he observes it is only those who are troubled with that species of leprosy which is confined to the joints, that have this disposition to venery. Those afflicted with the other species of leprosy which Hillary has distinguished in his Treatise on the Diseases of Barbadoes, under the title of the Leprosy of the Arabs, have no such propensity. The sufferings these undergo deprive them at once of every kind of desire as well as of the means of gratification, supposing they even possessed the power. This remark of Mons. Sonnini is well founded.

The disease arises sometimes from an hereditary taint, or predisposition, being in that case entailed from one generation on another; but it more commonly proceeds from infection, communicated either by cohabiting, or otherwise coming in contact with those who labour under it in a high degree. That a predisposition to the leprosy is often derived from the parents, I have had the most convincing proofs, having seen it affect many persons of one family, although they have been kept apart from each other.

The leprosy shews itself in numerous copper-coloured spots dispersed over the whole body, which are attended with a degree of insensibility, and these keep increasing gradually both in size and number, perhaps, for some months, without occasioning any great alteration in the general state of health. As the disease advances, however, the skin begins to grow rough and scaly; the features of the face become greatly enlarged, especially above the eyebrows, the hairs of which, and the beard, fall off; the alæ of the nose swell and become scabby; the nostrils ulcerate; the voice is hoarse, and the pronunciation nasal; the lobes of the ears are greatly thickened, and affected with tubercles and dry scabs; and sometimes ulcers are produced upon the fingers and toes, which at last separate joint after joint; the breath is highly offensive; fetid virulent sores arise in various parts of the body, which becomes at length a putrid mass; it wastes daily, and nature at last sinks under the weight of misery.

This is the form under which the leprosy is usually met with in warm climates among negroes, a race of people seemingly more liable to its attacks than whites; but in this and other cold climates it always appears under a much milder form, and is never attended with the violent symptoms just enumerated, seeming to be merely a local disease of the cutis, its vessels and glands.

Although, by paying a proper attention to regimen, and administering alteratives, we may be able somewhat to retard the progress of the disease, and thereby prolong the life of the patient; still when the habit becomes generally tainted, all means will be likely to prove inefficacious. When it arrives at the stage of ulceration, it is highly infectious by contact.

In dissections of leprosy, all the organs have been discovered in a state of putrescency except the heart.

If any relief is to be afforded in this disease, it is chiefly to be obtained by the regular and rigid observance of a vegetable diet, commenced on the first appearance of its approach. As soon, therefore, as any symptom of it is observed, the patient should be debarred from fish, butter, and all sorts of animal food whatever, substituting fruits and vegetables of various kinds; and this course ought to be persisted in for the remainder of his life. At the same time that he gives up the use of animal food, he ought likewise to avoid all heating liquors, such as wine and spirits. Besides paying much attention to diet, he is likewise to take a due proportion of moderate exercise, and to keep his body regularly open.

Small doses of mercury joined with antimony have been given at an early period of the disease, but I cannot say I ever saw any good effect derived from their use. A solution of hydrargyr. muriatus and Plummer's pill,* are the preparations most in repute, and with these the patient may drink about a pint a day of the decoctum sarsaparillæ compositum. A decoction of elm-bark taken in the same quantity daily, has proved highly serviceable in some cases of incipient leprosy. A beer made from the essence of spruce fermented with molasses or syrup, and used for ordinary drink, has likewise proved beneficial in some instances.

Strange remedies, such as viper and lizard broths, have been recommended in the cure of leprosy; but on all the trials which I have known made with them they proved wholly inefficacious.

Arsenic has lately been proposed as a remedy, which we are given to understand is much used in Asia in this disorder. Dr. Fowler's drops, as mentioned under the head of Intermittents, or the pills as advised under that of Elephantiasis, may be employed, should we wish to make trial of it.

As a putrid disposition evidently prevails in leprosy, might not a

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* ℞. Calomel. Præparat.
Sulph. Antimon. Præcip. āā ʒß.
Guaiac. Gumm. Resin. ʒij.
Bals. Copaib. q. s. M.
Fiant Pilulæ lx. Capiat j—iv. hora decubitus.

long-continued course of the bark of cinchona joined with muriatic or nitric acid be likely to produce a good effect? In incipient cases, I think, there can be no doubt, but that the Peruvian bark, with the mineral acids, might be of service. Possibly the oxygenated muriate of potash may be a good auxiliary. If tried, it ought to be given in the form of solution.

To prevent the leprosy from spreading, it will be necessary to avoid any kind of close communication with persons who are infected. It is too customary with proprietors and managers of estates in the colonies to turn such negroes adrift on the public, and being thus exonerated from labour and servitude, they range about, and infect all those with whom they either cohabit or associate. It is true, indeed, that the legislative body, in many of the islands, has enacted laws for the prevention of this evil; but from a neglect in the magistrates and constables to enforce them, they are wholly disregarded, and the disease has become a very frequent one.

The mild species of leprosy met with in cold climates is to be removed by small doses of mercury given so as to produce an alterative effect, assisted by warm bathing and a decoction of the woods, mezereon, lobelia syphilitica, and the decoct. dulcamaræ or decoct. astragali, as mentioned under the head of Syphilis. These will cleanse and soften the skin. Antimonials, together with a decoction of the inner bark of the elm-tree, I have frequently administered with a good effect.

Harrowgate water has been found very serviceable, not only in a great variety of cutaneous complaints of a trifling nature, but likewise in many of the more obstinate and painful disorders of the skin, such as the elephantiasis and leprous eruption. These complaints receive material advantage by employing the warm bath, which accordingly makes part of the plan of cure; and during its use, very moderate doses of the water warmed, and repeated at proper intervals, will materially assist in keeping up that full perspiration which is promoted by the bathing, and always continued for some hours, by confining the patient in bed after immersion, wrapped up in flannel. In this respect, however, the cold sulphureous waters are not so advantageous as those which are naturally hot; for the former, in being artificially warmed, must lose some of the sulphureous gas, on which part of their efficacy, even when applied externally, must depend; but we have no natural springs of this kind in our country. They are, however, to be met with at Aix la Chapelle in Germany, and in our two colonies, the islands of Jamaica and Nevis. Persons resident in these places, who labour under leprous eruptions, should not fail to avail themselves of the advantages to be derived from these waters.

We are informed by Dr. Kinglake,* that, in several cases of chronic eruption on the cuticular surface, which had resisted the warm bath, the internal and external use of the corrosive muriate of mercury, antimonials, guaiacum, and likewise the nitrous acid, he performed complete cures by giving the patient ten drops of the sulphuric acid three times a day in a teacupful of pure water, and by washing the eruptions with a solution of the same mixed in water, in the proportion of half a drachm of the former to one pint of the latter. This was done by dipping a small piece of

* See Medical and Physical Journal, vol. iv. p. 482.

linen in the liquid, and moistening with it the parts affected. He observed that the external application was productive of severe pain at first, but this inconvenience daily diminished. The dose of sulphuric acid above-mentioned is calculated for a child of three years of age, but adults may take thirty drops thrice a day in half a pint of water, gradually increasing the quantity to one or two teaspoonfuls. If attended with any purgative effect, a small addition of tinctura opii may be made.

Of the PLAITED HAIR, PLICA POLONICA vel TRICHOMA.

PLICA Polonica is a disease in which a morbid matter is deposited upon the hair, and binds it together in such a manner, that to unravel it is impossible. In Poland, Lithuania, Hungary, Transylvania, Prussia, Russia, and Tartary, it is endemial; but the scalp is not its only seat, for it sometimes extends to the hairs of the pubes.

The exciting causes of the disease are uncertain, as neither the air, water, nor food seem to have any effect in producing it: nor are cleanliness and regular combing of the hair, it is said, any defence against it. Certain it is, however, that it prevails only among the lower class of people, whence many have conceived that it is to be considered merely as a consequence of uncleanliness. From some observations made by Mr. Frederick Hoffman, surgeon to the Prussian army, it appears that a predisposition to it may be transmitted from parents to their offspring; and he observes * that as no other cause can be assigned for the disease, it is probable that it arises, according to the general opinion, from contagion; a contagion which, like that of psora, can be communicated by contact only.

We are told by Mons. Alibert, physician to the Hospital of St. Louis at Paris,† that as the Poles rarely comb and scarcely ever wash or clean their hair, and as they wear warm fur caps, the disease in question is much favoured thereby. By the heat, he says, an afflux of humours is determined towards the head, which thus becomes a common sewer to all the organs of the body, whilst by its nastiness the pores are so obstructed, that the exuberant fluids are forced through the canals of the hairs. He observes, that plica is sometimes communicated by contagion, and sometimes by suckling, but he has noticed at the same time that strangers are but little liable to be affected by it.

According to Monsieur de la Fontaine,‡ an eminent physician at Warsaw, the proximate cause of the disease seems to be a peculiar

* See his Obfervations on Plica Polonica, Vol. IV. Part II. of the Memoirs of the Literary and Philofophical Society of Manchefter.

† See his Defcription des Maladies de la Peau.

‡ See article the firft, vol. the 1ft, of the Annals of Medicine for the Year 1796, by Andrew Duncan, M. D.

morbid matter, which is clammy and acrid, has its seat in the lymph, and is deposited critically upon the hair.

An opinion universally prevalent with the Polish peasants is, that the disease is a salutary effort of nature to expel a morbid matter from the body, and that to interrupt the course of it, would be productive of danger; hence they make no attempt to cure, or even palliate the complaint. This opinion is, however, erroneous, as will presently be noticed.

Both sexes have been observed to be equally liable to the attacks of plica. It more usually comes on during infancy, than after the age of puberty. Besides the human species, other animals, such as the horse, and those of the canine species, as dogs, wolves, and foxes, are said to be subject to this complaint.

The accession of the disease we are told is commonly preceded by general lassitude and heaviness, pains in different parts of the body, particularly in the head and eyes, and some degree of febrile affection, all of which diminish or cease immediately on the appearance of the plica. Most usually the hairs of the head are alone affected, and that only in particular parts. In these the hairs grow considerably longer than in the rest, they often seem greatly enlarged in their diameter, and are much knotted and entangled; being also covered with the viscid matter which issues from their roots, and which assists in gluing them together.

In proportion as the quantity of this gluten, and the implication of the hair increase, it is still more and more difficult to clean and comb it; hence a degree of phthiriasis is produced, and the head contracts an extremely fetid smell, to which, however, the Polish peasants are so much accustomed, that they endure it without complaint, or any manifest inconvenience.

In consequence of frequent scratching, the nails of the fingers being imbued in the matter, now and then become diseased; they increase in thickness, change their colour, and are unequal on their surface.

The disorder frequently continues for life, when neglected; but is not found to be attended with fatal consequences, except perhaps from an injudicious mode of treatment.

In the beginning of the disease, we are recommended by Mons. de la Fontaine to employ resolvent, attenuant, saponaceous, demulcent, and emollient remedies, to prepare the morbid matter for a crisis. If these be not sufficient, he adds extract of aconite, or cicuta, calomel, or some antimonial. In general, he says, antimony is a specific in this disease. If it be complicated with lues, muriated mercury in small doses produces the very best effects, but salivation is highly detrimental in every case.

These remedies can only be employed when no fever is present; in this case, blood-letting and evacuants must be used very cautiously. Mons. de la Fontaine compares the disease to the small-pox, and observes, that when the fever is too weak to produce the eruption, it must be increased; when it is too violent, it must be diminished. Hence the strength of the patient must often be supported with a generous diet. To bring about a crisis, we are advised to make use of sudorifics.

If the morbid matter be deposited on the surface of the body, it occasions malignant and obstinate sores, which give a great deal of trouble.

Antimony should always be an ingredient in whatever medicine we administer.

When our endeavours prove inadequate to produce the crisis, inoculation of the disease will often, it is alleged, effect it. This is performed by putting on a cap which has just been worn by one who has a recent plica. After a complete crisis, the plica separates from the head, and remains attached only by the sound hair. If it has become dry, and all symptoms have ceased, it may be cut off.

External remedies are always proper and necessary; such as the application of warmth to the head in the form of vapour, warm bath, or fomentation: washing the head with a warm solution of soap will likewise prove serviceable. Hair-powder rubbed with mercury will be a good remedy to destroy the vermin. Where the patient is much incommoded by a head-ach, the application of a blister to the neck or between the shoulders may possibly relieve it.

It has before been stated that the opinion generally entertained in Poland, that there is danger in cutting off the hair in this disease, and promoting the cure by external remedies, is wholly erroneous. The following fact, which occurred at Breslaw, and communicated by Dr. De Carro of Vienna in a letter to the Editors of the Bibliothéque Britannique, fully establishes this assertion.

"Some years ago one third of the recruits of the regiments of artillery brought from South Prussia were attacked with plica Polonica. An order was received from Berlin to send to that city all those that were infected, and to take care that the disease was not communicated to others. This order, it appears, was not agreeable to the commanders of companies, as it would have occasioned the loss of at least two hundred young soldiers. M. Hœnel, surgeon-major to the artillery regiment, became mediator in the cause; he made the recruits be brought on the ramparts, and ordered that a general shaving should be made. In a little time, a pile of plica was accumulated; these trophies were then cast into a ditch, and the heads of the men carefully washed with soap and water daily for some weeks: by this simple method those dirty Polanders were speedily transformed into good soldiers, without having in the least suffered by the loss of this precious ornament of their heads."

This statement clearly points out the absurdity of the opinion entertained by the generality of the Polanders, and shews that the disease in question may be cured with as much safety as tinea capitis. It likewise evinces that many of the external remedies which have been advised in the latter may be employed with advantage in the former: indeed tinea capitis and plica Polonica seem, I think, to be very similar diseases.

Of the SCURVY, or SCORBUTUS.

THE characteristics of this disease as affixed by Dr. Cullen, are debility; bleeding of the gums; spots of different colours on the skin, for the most part livid, particularly at the roots of the hairs, occurring in cold countries, after living on putrescent salted animal food, with a deficiency of recent vegetable matter.

The scurvy is a disease of a putrid nature, much more prevalent in cold climates than in warm ones, and which chiefly affects sailors, and such as are shut up in besieged places, owing, as is supposed, to their being deprived of fresh provisions, and a due quantity of acescent food, assisted by the prevalence of cold and moisture, and by such other causes as depress the nervous energy, as indolence, confinement, want of exercise, neglect of cleanliness, much labour and fatigue, sadness, despondency, &c. These several debilitating causes, with the concurrence of a diet consisting principally of salted or putrescent food, with foul water, will be sure to produce this disease. It seems, however, to depend more on a defect of nourishment, than on a vitiated state; and the reason that salted provisions are so productive of the scurvy, is most probably, because they are drained of their nutritious juices, which are extracted and run off in the brine. As the disease is apt to become pretty general among the crew of a ship, when it has once made its appearance, it has been supposed by many to be of a contagious nature; but the conjecture seems by no means well founded. The circumstance arises most probably from the men being alike exposed to the exciting causes of it.

A preternatural saline state of the blood has been assigned as its proximate cause. It has been contended by some physicians, that the primary morbid affection in this disease, is a debilitated state of the solids, arising principally from the want of aliment.

Various theories have indeed been advanced with respect to scurvy. By Sir John Pringle it has been supposed to be owing to a putrescency of the blood. By Dr. Lind, Dr. Blane, and Dr. Millman, it has been looked upon as a disease of debility, having its origin in the weakness of the organs of digestion, or in the gradual diminution of the vital power by the remote causes; or that it is owing rather to a defect of nourishment than to a vitiated state of it. Dr. Trotter, reasoning from the experiments of Dr. Goodwin concerning the action of dephlogisticated air on the blood, infers that the black colour of this in scurvy is owing to the abstraction of this principle (dephlogisticated air,) and that fresh vegetables cure the disease by restoring to the blood this lost principle. Dr. Beddoes supposes scurvy to be owing to a gradual abstraction of oxygen from the whole system, just as death is produced in drowning, by withholding all at once the same substance from that blood which is to pass the posterior cavities of the heart. Of the two causes of scurvy, want of fresh vegetables, or want of air sufficiently furnished with oxygen, Dr. Beddoes thinks the latter is by far the most powerful. Captain Cook's unexampled success in preserving his crews

from the scurvy during his two last voyages, seems to have been owing in a great measure to his extreme care in keeping every part of the ship well ventilated. The crew on many occasions were reduced to salt provisions, and much longer out of sight of the land than many other ships which have been dreadfully afflicted with the scurvy. In his last voyage there did not appear among the men any symptom of this disorder; and in his second, only one man had it in any considerable degree.

The scurvy comes on gradually, with heaviness, weariness, and unwillingness to move about, together with dejection of spirits, considerable loss of strength, and debility. As it advances in its progress, the countenance becomes sallow and bloated, respiration is hurried on the least motion, the teeth become loose, the gums are spongy, the breath is very offensive, livid spots appear on different parts of the body, old wounds which have been long healed up, break out afresh; severe wandering pains are felt, particularly by night; the skin is dry; the urine small in quantity, turning blue vegetable infusions of a green colour; and the pulse is small, frequent, and towards the last, intermitting; but the intellects are for the most part clear and distinct. In some cases of scurvy, and even in its incipient state, nyctalopia has been observed as one of the attendant symptoms.*

By an aggravation of the symptoms, the disease, in its last stage, exhibits a most wretched appearance. The joints become swelled and stiff, the tendons of the legs are rigid and contracted, general emaciation ensues, hemorrhages break forth from different parts, fetid evacuations are discharged by stool, and a diarrhœa or dysentery arises, which soon terminates the tragic scene.

Scurvy, as usually met with on shore, or where the person has not been exposed to the influence of the remote causes before enumerated, is unattended by any violent symptoms; as slight blotches with scaly eruptions on different parts of the body, and a sponginess of the gums, are the chief appearances to be observed.

In forming our judgment as to the event of the disease, we are to be directed by the violence of the symptoms, by the situation of the patient with respect to a vegetable diet, or other proper substitutes, by his former state of health, and by his constitution not having been impaired by previous disorders.

Dissections of scurvy have always discovered the blood to be in a very dissolved state. The thorax usually contains more or less of a watery fluid, which in many cases possesses so high a degree of acrimony, as to excoriate the hands by coming in contact with it. The cavity of the abdomen contains the same kind of fluid. The lungs are black and putrid; and the heart itself has been found in a similar state, with its cavity filled with a corrupted fluid. In many instances, the epiphyses have been found divided from the bones, the cartilages separated from the ribs, and several of the bones themselves dissolved by caries. The brain seldom shews any marks of disease.

* See Dr. Blane's work on the Diseases of Seamen.

From experiments made on the blood and urine of scorbutic patients, it appears that three ounces of blood, on cooling, consisted of two ounces of coagulum and one of serum. The coagulum was composed of two parts; that on the top, about the sixteenth of an inch, was of a florid red, and tough; that in the bottom, of a deep red, approaching to black, and easily divided. The serum, with respect to colour, was not uncommon. Vinegar did not alter the colour of the black part of the coagulum. By the addition of lemon-juice, it became somewhat lighter; on the admixture of a solution of nitre in vinegar it became of a florid red; the same took place with nitre and lemon-juice. By volatile alkali, and diluted sulphuric acid, the coagulum was turned black, and was again rendered florid by the addition of nitre in the juice of lemons, and in vinegar.

To counteract the principal remote causes of the disease, viz. the effect of salt provisions, and the want of fresh meat and vegetables, every ship bound on a long voyage should be supplied with an ample store of flour, pearl-barley, groats, peas, oatmeal, rice, sago, vermicelli, portable soup, potatoes, sour krout (which is cabbage fermented with vinegar,) raisins, currants, prunes, and other dried fruits, various spices, many kinds of medicinal herbs, as balm, mint, penny-royal, sage, &c. together with sugar, treacle, honey, essence of spruce, and fresh wort. High encomiums have indeed been passed on the efficacy of this last by all the navigators who have made trial of it, and they seem by no means to have been unworthily bestowed; but as its salubrious qualities are greatly impaired by becoming damp and mouldy, every possible care should be taken to prevent this from happening.

Besides the articles which have been enumerated, the ship should likewise be supplied with a sufficient store of spirituous and fermented liquors, as rum, brandy, beer, and porter, together with wine, cyder, vinegar, and other acids, but more particularly the concrete juice of lemons, limes, and oranges, together with these fruits in their natural state.

If it can be avoided, salted provisions should by no means be constantly served out to the crew; but fresh animal food, with a due proportion of such farinaceous substances as the ship is supplied with, or of such fresh vegetables and fruits as have been procured at whatever ports it may have touched, ought to be delivered out to the men.

The health of seamen may be supposed to depend considerably on the goodness and purity of the water which they drink; but it too frequently happens, by an inattention in laying in the store of this necessary article, that it very soon becomes both putrid and offensive, and in this state they are obliged to make use of it. Nothing has been found so effectual for preserving water sweet at sea, during long voyages, as well charring the insides of the casks before they are filled; and certainly it would be highly advisable for our Admiralty to issue orders for the universal adoption of this process throughout the navy. Care ought at the same time to be taken that the casks should never be filled with sea-water, as sometimes happens, in order to save the trouble of shifting the ballast, because this tends to hasten the corruption of the fresh water afterwards put into them. When the water becomes impure and offensive at sea, from

being ignorant of the preservative effect produced on it by charring the casks previous to their being filled, it probably may be sweetened by putting a little fresh charcoal into each cask before it is tapped.

To preserve seamen in health, and prevent the prevalence of scurvy, it will further be necessary to keep the ship perfectly clean, and to have the different parts of it daily purified by a free admission of air, when the weather will admit of it, and likewise by frequent fumigations agreeable to Dr. Carmichael Smyth's plan, as mentioned under the head of Typhus Gravior. This precaution will more particularly be necessary for the purification of such places as are remarkably close and confined.

The coldness and moisture of the atmosphere are to be corrected by sufficient fires.

Cleanliness on board of a ship is highly necessary for the preservation of the health of seamen; but the custom of frequent swabbings or washings between the decks, as is commonly practised, is certainly injurious, and greatly favours the production of scurvy and other diseases, by a constant dampness being kept up.

The men should be made to air their hammocks and bedding every fine day; they should wash their bodies often, and they should change their linen and other clothes frequently. In rainy weather, on being relieved from their duty on the deck by the succeeding watch, they should take off their wet clothes, instead of keeping them on, and lying down with them, as they are too apt to do. In fine pleasant weather, and after their usual duty is over, they should be indulged in any innocent amusement that will keep their minds, as well as bodies, in a state of pleasant activity, and perhaps none is more proper than dancing; which makes a fiddle, or a pipe and tabour, a desirable acquisition on board of every ship bound on a long voyage.

No seaman labouring under any disease, especially one of a contagious nature, should be suffered to remain among those that are in health. On the contrary, he ought quickly to be removed to the hospital or sick room, a place which every ship that has a number of men on board, should by all means be furnished with; and this should be situated in an airy and dry part of it.

While speaking of the means of preserving the health of seamen, it may not be improper to observe, although not immediately relating to the disease I am here treating of, that in warm climates the crews of ships are healthier at sea, when the air is dry and serene, and the heat moderated by gentle breezes, than when rainy or damp weather prevails; and they usually enjoy better health when the ship is moored at a considerable distance from the shore, and to windward of any marshy ground or stagnant waters, than when it is anchored to leeward of these, and lies close in with the land. Masters of vessels stationed at, or trading to any parts between the tropics, will therefore act prudently, when they have arrived at their destined port, to anchor a considerable distance from the shore, and as far to windward of all swamps, pools, and lakes, as can conveniently be done; as the noxious vapours which

will be wafted to the crew, when the ship is in a station of this nature, will not fail to give rise to diseases among them.

When unavoidably obliged to submit to such an inconvenience, some means ought to be adopted to prevent disagreeable consequences from ensuing. For this purpose, a large sail should be hoisted at the foremast or most windward part of the ship, so as to prevent the noxious vapours from coming abaft; the cabin, steerage, and between the decks should be fumigated now and then, and the seamen be made to smoke tobacco freely.

Unless absolutely necessary, it will be improper to permit any of the crew to sleep from on board, when stationed off an unhealthy shore; but when necessity obliges them to do so, for the purposes of wooding or watering, a tent or marquee should be erected, if a proper house cannot be procured, and this should be pitched on the driest and highest spot that can be found, being so situated as that the door shall open towards the sea. Under cover of this, a sufficient number of hammocks are to be suspended for the accommodation of the men by night, as they should by no means be suffered to sleep on the ground.

If the tent happens unfortunately to be in the neighbourhood of a morass, or has unavoidably been pitched on flat moist ground, it will be advisable to keep up a constant fire in it by day, as well as by night; and as a further preventive against those malignant disorders which are apt to arise in such situations, the men should be directed to smoke freely of tobacco, and to take a wine-glass full of the tinctura cort. Peruviani composita every morning on an empty stomach, and the same quantity again at night.

Nothing is more productive of disease in warm climates among seamen, than an immoderate use of spirituous and fermented liquors, as they are too apt, while under a state of intoxication, to repose themselves on the bare ground, where perhaps they lie exposed for many hours to the influence of the meridian sun, the heavy dews of the evening, or the damp chilling air of the night. The commander of a ship, who pays attention to the health of his crew, will therefore take every possible precaution to prevent his men from being guilty of an excess of this nature; and likewise that they do not lie out in the open air, when overcome by fatigue and hard labour.

The different voyages of that celebrated navigator Captain Cook, as well as that of the unfortunate La Pérouse, incontestably prove that by due care and a proper regimen, seamen may be preserved from the scurvy and other diseases which have formerly been inseparable from long sea-voyages, and that they can support the fatigues of the longest navigations in all climates, in all latitudes, in the midst of fogs, and under a burning sun.

In all long voyages, it ought to be our object not only to find out and employ the most effectual means to cure the disease when it shews itself, but likewise to prevent its arising at all, as the taint never fails to give a fatal or malignant tendency to the other disorders incident to seamen, such as ulcers, dysentery, &c.; and with this view, our preventive plan ought to commence from the first day on which the sailing stock

of fresh vegetables and ship's beer is expended; since from many experiments it appears, that much greater success is likely to attend our endeavours in this way than by reserving them for the period in which the marks of a scorbutic diathesis begin to manifest themselves.

When, from a want of the proper precautions before pointed out, the scurvy makes its appearance among a number of men, be it on board of a ship or in a close garrison, we are then to counteract its effects, first, by obviating the putrid state of the system, and, secondly, by restoring it to its former vigour.

The first of these is to be accomplished by a diet of fresh animal and vegetable food, but more particularly the latter, consisting of garden and water-cress, mustard, horse-radish, common radish, scurvy-grass, celery, endive, and lettuces, all of which may be eaten in their crude state, together with spinach, beet, carrots, turnips, cabbages, cauliflowers, broccoli, asparagus, the young shoots of hops, &c. which may be prepared by any common process of cookery. To these may be added a free use of ripe fruits, especially those of a subacid kind, such as oranges, shadocks, and others of this class. For ordinary drink, the patient may use milk, or its productions, as whey, butter-milk, &c. or else an infusion of malt or spruce.

Such things are however only to be procured on shore, and therefore cannot be obtained for a ship's crew, unless they remain in port. When at sea, other substitutes must be resorted to.

One of the most effectual of this kind has been found to be lemon-juice, with which most ships belonging to government, and bound on a long voyage, are, I understand, now supplied. Where fresh vegetables are not to be obtained, we ought to have recourse to this. To render its effects more certain, and prevent it from irritating the bowels, we should mix it with a sufficient quantity of water and sugar, which will make a pleasant drink usually known under the name of sherbet. If a due proportion of wine is added, it will render it still more antiseptic. The quantity of juice used during the first three or four days, ought not to exceed two ounces daily, but it may afterwards be increased to three or four per diem.

In Dr. Trotter's Medicina Nautica is inserted a letter from Mr. A. Baird, surgeon of the Hector ship of war, communicating to him the wonderful benefit derived from the use of lemon-juice in a voyage to and from the East-Indies, during which, although the scurvy became very prevalent, he did not lose a single man. His words are, "When I consider the alarming progress which the scurvy was making among the Hector ship's company previous to the administration of lemon-juice as a preventive, the sudden check that disease met with afterwards, and the powerful effect of the acid in very bad cases; I think I shall not be accused of presumption, when I pronounce it, if properly administered, a most *infallible remedy* both in the cure and prevention of scurvy."

Where the fresh juice cannot be procured, we may substitute with the greatest advantage the citric acid in a concrete form, as first prepared

by Mr. Coxwell. We are informed by Dr. Trotter,* that he has experienced its powers against scurvy to be equal to any effect he has ever observed from the recent fruit, in its most perfect state. Other practitioners have reported alike favourably of it. It takes from sixteen to eighteen parts of water to bring the concrete acid to the standard of lemon juice. It is obtained after the manner of Scheele,† by combining the fresh vegetable acid with lime, and then precipitating by means of the sulphuric acid.

Dr. Trotter observes that Government mistake in making their contract for lemon-juice for the use of the navy, as what is furnished is often adulterated with the acetous acid, and sometimes contains the pulp, which renders it liable to ferment. Lemon and lime juice, he says, should be procured in Portugal and the West Indies, and in each place be combined with calcareous earth. It may be imported in barrels, and in that state be sent to sea, when the separation of the liquid acid is so easy a process, as to require no trouble, and the medicine will be always in the best state. Combined with calcareous earth, the acid will remain unchanged for a great length of time.

It has been common to employ the fossil acids in this disease; but there is some reason to doubt if they are of any service, and it is certain they are not effectual remedies. Moreover, they can hardly be thrown in, in such a quantity as to be useful antiseptics.

In a Treatise on Scurvy by Mr. D. Patterson, surgeon in the navy, we are informed, that, from certain reasons, he was induced to try a solution of nitre in common vinegar, in several cases of this disease, which with inexpressible pleasure he saw to succeed in every one of them; and from frequent trials of it, he is convinced that the scurvy may be cured at sea, without the assistance of recent vegetable matter. If this turns out as stated, the discovery will indeed prove of great national advantage.

Mr. Patterson supposes, that the good effects of nitre in mitigating or removing the disease, are to be accounted for solely from the dephlogisticated or vital air it contains, and that it may be rendered more active by being combined with an acid. He allows common vinegar to be of little or no utility, when given by itself; yet supposes, that if it was charged with dephlogisticated or oxygen air, it might prove highly beneficial; and this he presumes to be effected by the addition of nitre. The following is his method of preparing this new remedy and making use of it.

At first he dissolved two ounces of nitre in one quart of the ship's vinegar, and gave half an ounce of the solution (which he named acidum nitrosum, or nitrous vinegar) to some twice, to others thrice in the day, and as frequently bathed their blotched and ulcerated limbs with the same. From the good effect it had, and from its not producing the smallest degree of nausea, colic, or diarrhœa, he was induced to augment the dose to an ounce, and to repeat it as often as before.

* See Medical and Phyfical Journal, vol. iv. p. 154.
† See Crell's Journal for 1784.

Finding by far the greater number of scorbutics, who were under his charge, bore the increased dose of the medicine, without expressing the least uneasiness, he now, instead of two, dissolved four ounces of nitre in one quart of vinegar, and gave from half an ounce to two ounces of this strong solution twice, thrice, or four times in the day, if they were either blotched, stiff, or ulcerated. In this manner, we are informed, he continues to use it.

He adds, "Some patients cannot bear the nitrous vinegar without the addition of water; while others, without the least inconveniency, bear it undiluted. The discharge by stool, or the presence of gripes and nausea, guide me with respect to increasing or diminishing the dose of the nitrous vinegar; but at the same time, it is not a slight degree either of nausea, colica, or diarrhœa, that renders an alteration in the quantity of the medicine necessary. To a great number of scorbutic patients, eight ounces of this strong solution, containing one ounce of nitre, have, in the course of the day, as long as such a quantity was necessary, been administered to each with the greatest success. Also a circumstance no less curious than pleasing, large and frequently repeated doses of this medicine have been given in cases of dysenteria scorbutica, and instead of increasing, I have always found it remove the disease. Sometimes, notwithstanding the free use of the nitrous vinegar, I have known constipation take place to a considerable degree; in which case I have found intermediate doses of the crystals of tartar necessary and highly advantageous. This very constipated state generally occurred where the disease was far advanced; but in a few particular cases, in delicate habits, and where the disease was not far advanced, I have perceived even small doses of the nitrous vinegar ruffle the stomach and intestines; to prevent or remove which, I have found two, three, or four grains of camphor, with each dose of the medicine, very effectual."

The effects of the medicine are as follow: "During a course of the nitrous vinegar, the belly in general is kept gently lax; the discharge of urine is increased, and changes from an alkaline to a healthy nature; the skin becomes open and more agreeable to the touch; the chilliness is changed to a pleasing warmth; and the pulse acquires steadiness and healthy strength. Sleep comes to be more and more natural. The sallow and the gloomy is gradually changed into a clear and cheerful countenance. By degrees, the inflammation of the mouth and nose subsides; the gums heal and get firm. The lower extremities lose, faster than could have been supposed, their livid hue; they gradually become softer, less painful, and more flexible, and ulcers put on a healthy appearance and skin over. The great oppression about the breast and stomach gives way, and the cough and the breathing become less laborious. The appetite and the sense of taste are restored; the depression of spirits and the lassitude are not remembered; the strength increases, and, at last, health returns."

Mr. Patterson, in comparing the effect of vegetable acid with that of the nitrous vinegar, writes as follows: "In the month of July, 1794, at sea, a small quantity of limes were purchased, by order of Admiral

Murray, for the use of the scorbutics at that time on board; but instead of depending altogether on their power, I gave them only to a certain number, on purpose to compare their effect with that of the nitrous vinegar, which was more generally administered; and from what I have seen of both, and after having weighed all circumstances, I am at present inclined to decide in favour of the latter."

Such is the report made by Mr. Patterson on the effect of these two acids; and as he seems to attribute the good effect of the remedy which he most approves of, to the nitre it contains and not to the vinegar, I beg leave to propose the following query: Might not a solution of nitre in lemon or lime-juice (which of themselves are powerful remedies in scurvy) be preferable to a solution of it in vinegar, or even to these acids, given by themselves?

By the means which have been pointed out, together with some other auxiliaries, such as spruce-beer, fresh infusions of malt or wort, sugar, and the succus cochleariæ compositus, we are induced to suppose that we shall in most cases, even in those of a desperate nature, be able to obviate the putrid tendency of the system, and effect a cure. Introducing oxygen into the system, by any kind of means, may likewise prove a good auxiliary.

It appears that the gases were used by the celebrated navigator La Pérouse in his voyage round the world; but he very wisely observes that bottles-full of them might be swallowed without doing seamen a thousandth part of the good they receive from good slices of roast beef, turtle, fish, fruit, herbs, &c.

In the course of the disease, particular symptoms may arise which will require a separate treatment. Pains of the belly are to be allayed by emollients and opiates; impeded respiration by blisters, for bleeding is never to be used; contractions of the hams and calves of the legs are to be relieved by fomenting the parts with warm vinegar and water, and by the application of emollient poultices; sponginess of the gums and looseness of the teeth are to be obviated by washing the mouth frequently with gargles of an astringent and antiseptic nature;* and foul ulcers are to be cleansed and healed by washing them with lemon-juice, or a tincture consisting of equal parts of that of myrrh and bark, and then dressing them with some kind of digestive ointment, or a poultice of sorrel. Some navy surgeons report that they have known the most obstinate ulcers of a scorbutic nature cured by applying a paste of oatmeal and water to them, the surface being sprinkled with the aqua lithargyri acetati. In very bad cases of ulceration, it is probable that the application either of the cataplasma effervescens, or cataplasma carbonis, as mentioned under the head of Gangrene, might be attended with a very good effect.

Dr. Harness, physician to the British fleet in the Mediterranean some

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* ℞. Infus. Rosæ ℥vj.
Alum. Purif. ʒjs.
Mel. Optim. ʒj. M.
Ft. Gargarismus.

Vel

℞. Decoct. Cinchonæ ℥vj.
Tinct. Myrrh. ʒjs.
Acid. Muriatic. gutt. xv.—xx. M.

years ago, informs us,* that after the failure of other remedies in the cure of scorbutic ulcers, and those where there was a tendency to mortification, he found the application of the gastric fluid of graminivorous animals to have been productive of the happiest consequences.

If, in the course of the disease, the bowels should not be loosened by the use of fresh vegetables, and costiveness prevail, we may then advise the taking a decoction of tamarinds, with a little of the crystals of tartar, to obviate it. Where the skin is dry and parched, a gentle diaphoresis may be excited by a decoction of the woods joined with antimony, as advised in lues venerea, or by camphor, combined with the pulvis ipecacuanhæ compositus.

To answer the second indication of restoring the former vigour of the system, the patient should be put under a course of Peruvian bark, with chalybeates, and other tonics, as directed under the head of Dyspepsia. He should at the same time breath a pure, temperate, and dry air; take such daily exercise as his strength will admit of, use a generous nutritive diet, and lead a life of great regularity and temperance.

It has been generally supposed, that scorbutic patients require land air, and land recreations, for their more speedy and effectual recovery. Dr. Trotter, in his Medicina Nautica, endeavours to controvert this opinion. His words are, "There is not at present an officer in the fleet, that, in doing justice to either his people or his country, would prefer the cure out of a ship. Nay, there is often the most urgent necessity for keeping them on board, till they acquire a certain degree of strength. In the very weak stage, a scorbutic patient cannot bear the external air, which has been long observed, and recently confirmed by five men dying in the boat belonging to the Prince of Wales ship of war, between the Downs and Deal hospital."

An instance is mentioned in Mons. Charpentier Cossigny's Voyage to Canton, of a German soldier of twenty-eight years of age, who expired suddenly when the crew came in sight of the island of Roderigo, and who, although he had some slight symptoms of the scurvy, was not so ill as to be entered on the sick list. M. Cossigny observes, that he has seen other scorbutic patients, on inspiring the land air, lose all their strength, and die while they were carrying to the hospital. He conjectures, that the density of the land air stifled the German soldier, his lungs having lost their elasticity, &c. Dr. Trotter's sentiments are fully corroborated by this gentleman's remarks.

In those painful affections of the skin, of the kind usually termed scorbutic eruptions, that arise often without any very obvious cause, that chiefly depend on the habit of body, and make their appearance at stated intervals, in painful ulcerations of the skin producing a discharge of lymph, and an abundant desquamation, a long-continued course of the Cheltenham water is often attended with a very good effect. Where the disease is inveterate, it may be necessary to have recourse to alterative medicines, such as a combination of mercury with antimony (see

* See Dr. Duncan's Annals of Medicine for 1797.

Herpes,) together with the decoctum ulmi, nitric acid, spruce beer, &c. and a diet consisting chiefly of vegetables and milk. Sea-bathing will also be proper.

Of the JAUNDICE, or ICTERUS.

JAUNDICE is characterized by a yellowness of the skin and eyes, whitish or clay-coloured fæces, and the urine obscurely red, tinging things dipped into it of a yellowish colour.

It takes place most usually in consequence of an interrupted excretion of the bile, from an obstruction in the ductus communis choledochus, which occasions its passing again into the blood-vessels. In some cases it may however be owing to a redundant secretion of the bile.

The causes producing the first of these are, the presence of biliary calculi in the gall-bladder, and its ducts; spasmodic constriction of the ducts themselves; and lastly, the pressure made by tumours situated in adjacent parts: hence jaundice is often an attendant symptom on a scirrhosity of the liver, pancreas, &c. and frequently likewise on pregnancy. The proximate cause of icterus is absorption, or regurgitation of the bile into the vascular system.

Chronic bilious affections are frequently brought on by drinking freely, but more particularly of spirituous liquors; hence they are often to be observed in the debauchee and the drinker of drams. They are likewise frequently met with in those who lead a sedentary life, and who indulge much in anxious thoughts.

A slight degree of jaundice often proceeds from a redundant secretion of the bile, and a bilious habit is therefore constitutional to some people, but more particularly to those who reside long in a warm climate.

By attending to the various circumstances and symptoms which present themselves, we shall, in general, be able to ascertain with much certainty the real nature of the cause which has given rise to the disease.

We may be assured by the long continuance of the complaint, and by feeling the liver and other parts externally, whether or not it arises from any enlargement or tumour in this viscus, the pancreas, mesentery, or omentum.

Where passions of the mind induce the disease, without any hardness or enlargement of the liver, or adjacent parts, and without any appearance of calculi in the fæces, or on dissection after death, we are naturally induced to conclude that the disorder was owing to a spasmodic affection of the biliary ducts.

Where gall-stones are lodged in the ducts, acute lancinating pains will be felt in the region of the parts, which will cease for a time, and then return again; great irritation at the stomach and frequent vomiting will attend, and the patient will experience an aggravation of the pain after eating. A pain at the top of the shoulder or right arm, is another diagnostic of concretions in the gall-bladder and ducts.

When calculi are passing through the common duct into the duode-

num, the symptoms are not so obscure and uncertain as when lodged in the gall-bladder. Sometimes the attack is preceded by, or accompanied with a sense of coldness in the back and lower extremities. The person is seized with a sudden violent pain, exactly where the common duct enters the intestine. The pain is often so circumscribed, that the patient is apt to say, he can cover the extent of it with a finger, and sometimes it shoots through the back, and extends up between the shoulders. Persons thus seized cannot endure a recumbent posture, but are obliged to sit up with the body bent forward, which seems to afford a slight mitigation of the pain. In most cases, the stomach is so irritable, that every thing is immediately rejected. Sometimes bile is brought up, but not always; neither is vomiting a constant attendant. The intestines are invariably constipated; indeed the whole canal appears to share in the spasmodic state induced on the duodenum by the irritating cause.

If the bile is completely obstructed in its passage into the intestine, the fæces will be of a light clay colour, and the skin and eyes become yellow, from a regurgitation of the bile into the system. Although the pain is more exquisite than in hepatitis, and is sometimes accompanied with great disturbance in the general system, such as heat of the skin, quickness of the pulse, thirst, white tongue, high-coloured urine with a dark-coloured lateritious sediment, still inflammation seldom occurs. Sometimes the disorder continues several hours, and then a remission of pain ensues, either in consequence of the calculus entering the duodenum, or otherwise falling back into either of the ducts, or gall-bladder. After an interval of some days, or perhaps weeks, the paroxysm possibly returns again, indicating, that the obstructing cause has not been removed.

Biliary calculi are of various sizes, from a pea to that of a walnut, and in some cases are voided in a considerable number, being, like the gall, of a yellow, brownish, or green colour. They vary also with regard to their figure and hardness. Some are very rough and angular; at other times, they are oval, or round, and their surface smooth. Although these concretions have been generally found in the gall-bladder and ducts, yet they are sometimes met with in the pori biliarii and parenchyma or sponge and cellular substance of the liver.

The experiments made by Dr. Saunders on biliary calculi prove them to consist chiefly of a resinous matter with a little earth (apparently calcareous) combined with the mineral and volatile alkali.

The jaundice comes on with languor, inactivity, loathing of food, flatulency, acidities in the stomach and bowels, and costiveness. As it advances in its progress, the skin and eyes become tinged of a deep yellow; there is a bitter taste in the mouth, with frequent nausea and vomiting; the urine is very high coloured; the stools are of a grey or clayey appearance, and a dull obtuse pain is felt in the right hypochondrium, which is much aggravated by pressure with the fingers. Where the pain is very acute, the pulse is apt to become hard and full, and other febrile symptoms to attend.

The disease, when of long continuance, and proceeding from a chro-

nic affection of the liver or other neighbouring viscera, is often attended with anasarcous swellings, and sometimes with ascites.

Where jaundice is recent, and occasioned by concretions obstructing the biliary ducts, it is probable that, by using proper means, we may be able to effect a cure; but where it is brought on by tumours of the neighbouring parts, or has arisen in consequence of other diseases, attended with symptoms of obstructed viscera, our endeavours, most likely, will not be crowned with success. Arising during a state of pregnancy, it is of little consequence, as it will cease on parturition. A gradual diminution of the sense of weight and oppression about the præcordia; a return of appetite and of the digestive powers; the stools becoming copious and easily procured; the urine being secreted in a larger quantity, and ceasing to tinge linen of a yellowish colour, are to be regarded as favourable circumstances. A violent pain in the hypochondrium, or epigastrium, attended with a quick pulse, loss of strength and flesh, with anasarcous swellings of the extremities, chilliness, watchfulness, melancholy, or hiccup, denote great danger.

On opening the bodies of those who die of jaundice, the yellow tinge appears to pervade even the most interior part of the body; it is diffused throughout the whole of the cellular membrane, in the cartilages and bones; and even the substance of the brain is coloured by it. A diseased state of the liver, gall-bladder, or adjacent viscera, is usually to be met with. Calculi are sometimes found in the biliary ducts.

As jaundice occurs in almost every morbid condition of the liver, and as its occurrence evidently does not depend upon a specific morbid action of that organ, some physicians have been induced to consider it only as a symptomatic affection. Under the general appearance of jaundice, we ought therefore, by a careful investigation, to ascertain, as far as we are able, the real condition of the liver; for certainly such a discrimination must appear indispensably necessary, when it is considered, that the mode of treatment must be varied, according to the cause by which such an appearance is induced.

The cure of the disease, unpromising as it may at times appear, is nevertheless to be attempted, first, by restoring the interrupted passage of the bile through the duct; secondly, by carrying it off by the intestines; and thirdly, by relieving the particular symptoms. Whether the passage of the bile is obstructed by biliary concretions, or by spasmodic constriction of the ductus communis choledochus, the same plan nearly must be adopted.

Concretions, when of a large size, frequently excite, by their great distention of the biliary duct in their passage through it, not only acute pain, but very often a considerable degree of inflammation likewise. When this is the case, much fever is apt to attend. To guard against such consequences, it will therefore be advisable in full plethoric habits, where the symptoms run high, to take away a quantity of blood, proportionable to the state of the pulse, the severity of the pain, and the age of the patient.

Having adopted this step, we should next direct him to be put into a warm bath, in which he may be allowed to continue until some de-

gree of fainting is excited; he is then to be removed to bed, and to take an opiate, which may be repeated every four or six hours until ease is procured; and as the stomach is generally so irritable during the attack, that every thing taken into it is immediately rejected, especially fluids, it will perhaps be the best way to administer it in a solid form, as that of a pill. Besides these means, we may advise the constant application of a bladder filled with warm water, immediately over the region of the part which is most painful. Throwing up emollient clysters may serve as internal fomentations. Small nauseating doses of antimonials, or of the pulvis ipecacuanhæ compositus, together with a free use of diluting liquors, might probably afford some relief.

With the intention of pushing forward biliary concretions, vomiting has been much employed in jaundice. In recent cases, where we have no reason to suspect the concretion to be of any great magnitude, and where the pain is not acute, this remedy may be attended with a good effect, by compressing, during its operation, the distended gall-bladder and biliary vessels; but in cases attended with acute pain, and a considerable degree of fever, by which we are made acquainted with the presence of inflammation, vomiting would certainly be very likely to prove injurious.

An interesting case of inflammation of the gall-bladder proceeding from biliary calculi, and terminating in suppuration, which at length pointed externally, lately came under my observation. The patient was a woman of about forty years of age, who for a considerable time had been severely afflicted with pain in the stomach, febrile heat, faintings, and a purging. After a month or so, there arose a swelling near the navel, which upon being opened, discharged a quantity of yellow matter for many days. The pain becoming very acute in the tumour, the surgeon was induced to introduce his probe into the orifice of the wound, when, to his astonishment, he found a hard gritty substance at the bottom of it, which upon being discharged a few days afterwards proved to be a gall-stone of the size of a common nut. This was shortly succeeded by another, and in due time the woman's health was perfectly restored.

In many instances, it seems probable, that there is not much pain produced whilst a calculus of a moderate size is lodged in the gall-bladder, or even in the biliary ducts, until it arrives at that part where the common duct perforates the intestine: which opinion seems confirmed from cases reported by writers of the first respectability, where biliary calculi have been met with on dissection in the gall-bladder of persons who never were incommoded during their lifetime with any symptoms that indicated the presence of such a complaint.

Purgatives have been much used in the jaundice, not only with the view of obviating costiveness, but also with that of exciting the action of the biliary ducts, by increasing that of the intestines. Some physicians have, however, judged them useful only where there is a slow and bound belly; while others again assure us, that drastic purges, whose action is both brisk and of long continuance, have proved highly serviceable.

Regular stools, with a soluble state of the bowels, are certainly necessary to a person afflicted with the jaundice; and in more than one or two

instances I have known it to be completely removed by a diarrhœa supervening of its own accord.

Where the disease proceeds either from calculi, or from spasmodic stricture, it seems rational therefore to presume, that, after having pursued the steps before recommended, we may make use of purgatives* with much advantage; and in these cases I have certainly experienced their beneficial effects very frequently; but where jaundice arises in consequence of some chronic affection of the liver, or other adjacent viscera, active purgatives would be likely to do harm by inducing much debility. In instances of this nature we may substitute saline laxatives, such as any of the neutral salts.

With the intention of dislodging biliary concretions, gentle exercise, but more particularly that of riding on horseback, together with frictions, have been much advised, and certainly will be very proper, except during the paroxysms. Electrical shocks passed through the liver in the course of the common duct, may likewise prove a good auxiliary in promoting the passage of the calculus.

The warm bath and anodynes, by their relaxing and antispasmodic powers, have proved highly useful in the jaundice, when proceeding either from calculi or spasmodic strictures; and therefore when either of these causes is suspected to have given rise to it, they should by no means be neglected.

When a biliary concretion remains stationary, in spite of all our endeavours to dislodge it, and promote its being voided by stool, we may attempt its solution, however unsuccessful or inadequate the means may prove.

Dr. Darwin† made experiments on some fragments of a bile-stone with weak spirit of marine salt, a solution of mild alkali, a solution of caustic alkali and oil of turpentine, without being able to dissolve them. After some time these were all put into boiling water, and then the oil of turpentine dissolved the fragments, but no alteration was produced upon those in the other fluids, except some little change of their colour. Upon putting some other fragments of the same bile-stone into vitriolic æther, they were quickly dissolved without additional heat. Dr. Darwin therefore asks whether æther mixed with yolk of egg or honey, might not be given with advantage in bilious concretions?

† See Zoonomia, vol. ii. p. 4.

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* ℞. Pulv. Rhabarb. gr. xx.
Sapon. Alb. ʒfs.
Calomel. gr. xij.
Syrup. q. s. M.
Fiant Pilul. xxiv. Capiat ij. vel iij. hora decubitus.

Vel

℞. Calomel. gr. v.
Pulv. Jalapii ʒfs.
Mel. Optim. q. s. M.
ft. Bolus.

Vel

℞. Pilul. ex Aloe cum Myrrh. ʒfs.
Calomel. gr. iv.
Syrup. Zingib. q. s. M.
Fiant Pil. vj. pro dos.

Vel

℞. Gum. Scammon. Pulv. gr. v.—x.
Cryſtal. Tartar.
Pulv. Zingib. āā gr. xij.
ft. Pulvis.

We are informed‡ that a mixture of æther and spirit of turpentine is a remedy which has been employed by many practitioners on the continent as a solvent of biliary concretions with the most decided success; but more particularly by Monsieur Durande, who affirms that of late he has cured all whom he met with suffering from gall-stones. The plan adopted by him is, after having continued the use of emollient and aperient remedies, to give his patients a mixture of three parts of vitriolic æther and two of spirit of turpentine, in the dose of two scruples or a drachm every morning; and upon this he directs them to take some emollient drink, such as milk-whey, veal-broth, &c. &c. We are told in the publication alluded to, that M. Durande has seen biliary concretions perfectly dissolved, and discharged by stool in the form of a yellow matter resembling peas, by this method. As the remedy, however, is apt sometimes to occasion nausea and other distressing symptoms, it should be administered with due caution, lest the pain should be increased by it; and before having recourse to its aid, the proper steps for obviating inflammation ought assiduously to be adopted.

Should we discover that jaundice has arisen in consequence of an inflammatory affection of the liver, we must, at an early period, have recourse to the usual means for carrying it off by resolution; viz. by venesection, topical bleedings, the exhibition of cooling saline purgatives from time to time, and the application of a blister over the part, which ought to be renewed in a quick succession, if the disease does not soon abate; but where these have either failed or been neglected, and it has proceeded on to a chronic state of enlargement and scirrhosity, pressing thereby on the biliary ducts, we must then resort to a use of mercury, as advised under the head of chronic inflammation of that viscus. In warm climates the application of mercury in the form of ointment, immediately over, or in the neighbourhood of the part affected, has always been found the most efficacious means of discussing tumours in the liver, and if more universally adopted in cold ones, would in all probability be attended with the same good effect.

In cases of this nature, as well as in those of jaundice, arising from biliary concretions, it has been much the practice to employ neutral salts,* together with alkalies,† soap, and other deob-

‡ See Soemmering de Concretione Bilis.

* ℞. Decoct. Cinchon. ℥jfs.
Tinct. ejusd. ℥ij.
Sal. Polychrest. gr. xv.
Pulv. Rhabarb. gr. v. M.
ft. Haustus mane, hora meridiana et vespere sumendus.

† ℞. Natri Præparat. ʒij.
Pulv. Cinchonæ ℥j.
—— Rhabarb. ʒfs.
Mucilag. Gum. Arab. q. s. M.
ft. Electuarium cujus sumat nucis moschatæ quantitatem ter in die. *Vel*
℞. Natri Præparat.
Sapon. Venet. āā ʒij. Contunde simul et fiant pilulæ xx. Capiat ij. vel iij. bis in die. *Vel*

struents.* Soap has indeed been looked upon as a kind of specific in jaundice, and has therefore been employed in considerable quantities. Cicuta has also been used, but most probably without any good effect. Combining it either with bark or mercury† might possibly make it more efficacious.

The symptoms which usually prove most distressing in this disease, are the pain in the epigastrium, sickness at the stomach, and costiveness.

The two former of these will generally be relieved by bleeding, the warm bath, fomentations applied to the part, the exhibition of emollient clysters, and opiates, as before advised. Where they fail, the application of a large blister may possibly be attended with a better effect. Should the nausea and vomiting continue in spite of these means, we may then give the saline medicine in the act of effervescence, or something of a cordial antispasmodic‡ nature, that may be likely to abate the irritation in the stomach.

Costiveness is to be removed by gentle laxatives, such as are here advised.§

Vel

℞. Decoct. Cinchon. ℥x.
Tinct. Columb. ʒij.
Kal. Præparat. gr. xij. M.
ft. Hauſtus mane iterumque hora ante prandium, ſtomacho vacuo ſumendus.

Vel

℞. Kali Præparat.
Sacchar. Alb. āā ʒiij.
Aq. Fontan. ℥vj.
Tinct. Lav. C. ʒſs. M.
ft. Miſtura. Capiat Cochl. j. tertia vel quarta hora.

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* ℞. Sapon. Alb. ℈j.
Pulv. Rhabarb. gr. iv.
Ol. Junip. gutt. iij.
Conſerv. Aurant. q. s. M.
ft. Bol. ter die ſumendus cum Cochl. iv. Infus. Gentian. C.

Vel

℞. Gum. Ammoniac.
Sapon. Venet. āā ʒj.
Ol. Junip. gutt. v.
Syrup. Zingib. q. s. M.
Fiant Pilulæ xxiv. quarum ſumat iv. vel v. bis in die.

Vel

℞. Pulv. Rhabarb.
—— Aromat. āā ʒj.
Saponis Optim. ʒij.
Ol. Junip. gutt. v.
Syrup. Zingib. q. s. M.
ft. Maſſa, in Pilulas lxx. dividenda quarum ſumat iij. vel iv. mane et nocte.

Vel

℞. Sapon. Venet. ʒſs.
Aq. Cinnam. ℥jſs.
Syrup. Althææ ʒij.
Tinct. Lav. C. ʒj. M.
ft. Hauſtus mane et veſpere ſumendus.

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† ℞. Pulv. Cinchon.
Extract. Cicut. āā ʒij.
Syrup. Zingib. q. s. M.
Fiant Pilul. lx. Sumat iij. ad xij. in die.

Vel

℞. Pilul. ex Hydrargyro ʒſs.
Extract. Cicut. ʒij. M.
Fiant Pilul. lx. quarum ſumat iij. mane et nocte.

Vel

℞. Extract. Cicutæ ʒij.
Sapon. Venet. ʒj. M.
Fiant Pilul. l. Capiat ij. ad v. bis terve in die.

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‡ ℞. Confect. Aromat. ʒj.
Aq. Fontan. ℥vſs.
Spirit. Pimento ℥ſs.
—— Ammon. C. ʒſs.
Tinct. Opii gutt. xl. M.
ft. Miſtura cujus capiat Cochl. ij. vel iij. urgente nauſea.

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§ ℞. Ol. Ricini ℥ij.
Mucil. Gum. Arab. ʒj.
Tere ſimul et adde
Aq. Anethi ʒj.
Tinct. Jalap. ʒij. M.
Capiat dimidium pro re natâ

Vel

When the disease is of a chronic nature, and attended with anasarcous swellings, it will be proper to employ diuretics, as recommended under the head of Dropsy, strengthening the general system at the same time with astringent bitters, chalybeates, mineral waters, a nutritive generous diet, and gentle daily exercise, but more particularly on horseback. Moderate quantities of both soda and Seltzer waters will be proper.

In the progress of the disorder, it sometimes happens that a spontaneous diarrhœa arises, and prevents the future absorption of the bile into the mass of fluids. As long as it continues moderate, and induces no debility, it may be allowed to go on; but where it attacks with violence, or takes place in a constitution much injured and enfeebled, it should be stopped by having recourse to the means advised under that particular head.

When a putrid disposition shews itself, this must be counteracted by proper antiseptics. In jaundice arising from a scirrhosity of the liver, we must adopt the steps recommended in chronic inflammation of that organ.

A variety of other different remedies have been mentioned as possessing a good effect in jaundice, but many of them have been found on trial to be perfectly inert. Among the rest, raw eggs have been proposed as a solvent.

Dr. Darwin mentions the case of a gentleman between forty and fifty years of age, who had laboured under the jaundice about six weeks without pain, sickness, or fever, and had taken emetics, cathartics, mercurials, bitters, chalybeates, æther, &c. without any apparent advantage. On a supposition that the obstruction of the bile might be owing to a paralysis or torpid action of the common bile-duct, and the stimulants taken into the stomach seeming to have no effect, he directed half a score of smart electric shocks from a coated bottle, which held about a quart, to be passed through the liver, and along the course of the common gall-duct, as near as could be guessed, and on that very day the stools became yellow; the electric shocks being continued a few days more, the patient's skin became gradually clear. In cases where we have reason to suspect the obstruction of the bile to be owing to a torpid action of the bile-duct, and where other means have failed in promoting the desired intention, we should therefore make trial of electricity.

Vel

℞. Pulv. Jalapii ℈j
Cryſt. Tartar. ℈ij.
ft. Pulvis pro dos.

Vel

℞. Fruct. Tam. ʒvj. Decoque ex
Aq. Fontan. ℥v. ad ʒijſs.
Colat. adde
Mann. Optim. ℥ſs.
Kal. Tartariſat. ʒij. M.
ft. Hauſtus.

Vel

℞. Aloes Socotorin. ʒjſs.
Sapon. Venet. ʒj.
Kal. Præparat. ʒſs.
Syrup. Spin. Cerv. q. s. M.
Fiant Pilul. xxxvj. Capiat. iij. vel iv. hora decubitus.

Jaundice which arises from simple obstruction of the gall-ducts, is often removed by the internal as well as external use of Bath waters.

The complicated diseases which are brought on by a long residence in hot climates, affecting the secretion of bile, the functions of the stomach and alimentary canal, and which generally produce organic derangement in some part of the hepatic system, likewise receive much benefit from the Bath water, if used at a time when suppurative inflammation is not actually present. Whenever there is an increased heat of the skin and quickness of the pulse during the paroxysms excited by biliary concretions, these waters should not be taken until the acute symptoms subside.

Cheltenham water is another remedy which has been found of essential service in obstructions of the liver, and the other organs connected with the functions of the alimentary canal. Persons who have had their biliary organs injured by a long residence in warm climates, and who are suffering under the symptoms either of excess or deficiency of bile, and an irregularity in its secretion, receive remarkable benefit from a course of this water, judiciously exhibited. Its use may be here continued even during a considerable degree of debility; and from the great determination to the bowels, it may be employed with advantage to check the incipient symptoms of dropsy and general anasarca, which so often proceed from an obstruction in the liver. In full sanguine habits, the water of the saline spring only should be drunk. Dr. Saunders recommends drinking it warm. Cheltenham water, besides containing salts of a purgative nature, is likewise a chalybeate. The iron is suspended entirely by carbonic acid, of which gas, the water contains about an eighth of its bulk.

A diet consisting chiefly of vegetables appears to be best calculated for persons labouring under jaundice, or in whom bilious concretions are apt to form.

Together with a use either of the Bath or Cheltenham waters, great advantage may be derived from regular and sufficient exercise daily, particularly on horseback, as nothing will tend more to prevent the bile from stagnating and becoming inspissated, which it is apt to do in those persons who lead a studious or sedentary life.

CLASS IV.

LOCAL DISEASES.

AFFECTION of a part, not of the whole body.

ORDER I.

THE DYSÆSTHESIÆ.

DEPRAVATION or loss of some sense, from the fault of the external organ.

OF NIGHT BLINDNESS, OR NYCTALOPIA.

IN this disease the sight is perfectly clear and distinct in the day-time, but a total blindness takes place by night, from which occurrence it derives its name.

The disorder is peculiar to the inhabitants of warm climates, being rarely, if ever, met with in cold ones; and has been supposed to proceed from an affection of the retina and optic nerves, which suffer so much from the strong reflected rays of the sun by day, as not to be susceptible of the faint or weak light which the night furnishes.

It becomes apparent towards evening with a dimness of sight, which gradually increases as the night approaches; and the darker it gets, so much the more indistinct does vision become. It is, in general, unattended by any other symptom, except that perhaps a more than ordinary sense of fulness is now and then perceived in the fore part of the head and over the eyes.

Nyctalopia seldom proves a disease of much importance, or of long duration; but, on the contrary, generally admits of an easy cure.

Evacuation, both by bleeding and purging, has been recommended by such writers as have taken notice of this disorder; but as it is supposed to depend upon a relaxed state of the optic nerves or retina, these remedies appear to be improper, and those we employ ought to be such as will strengthen the tone of the parts. With this view, the eyes should be washed several times a day, by means of an eye-cup, with cold water, or some gentle astringent collyrium;* the patient at the same time wearing a green silk blind over his eyes, and avoiding all exposures to the sun, or any great glare of light.

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* R. Zinc. Vitriolat. gr. vij.—xv.
Aq. Rosæ ℥iv. M.

If the internal use of any medicine is necessary, it is probable that the Peruvian bark, joined with valerian and chalybeates, might be the most proper.

Of that Species of Blindness called GUTTA SERENA, or AMAUROSIS.

GUTTA Serena consists in a dimness of sight, whether the object be near or at a distance, together with the representation of flies, dust, &c. floating before the eyes; and the pupil is generally deprived of its power of contraction.

It is supposed to depend on some affection of the optic nerves; but its causes are nevertheless said to be various; some of which are, from their nature, incapable of being removed. Thus, in once case, the blindness has been found to be occasioned by an encysted tumour, which was situated in the substance of the cerebrum, and pressed on the optic nerves near their origin: in a second, by a cyst, containing a considerable quantity of water, and lodging itself on the optic nerves, at the part where they unite: in a third, by a caries of the os frontis, occasioning an alteration in the optic foramina; and in a fourth, by malformation of the optic nerves themselves.

In some cases, the defect of vision has been attempted to be accounted for by supposing a defect in the optic nerves, disqualifying them for conveying the impression of objects through the eyes to the brain, as, upon the minutest inspection by dissection, nothing has been discovered either in the structure of the eyes, or in the state of any of the component parts contributing to the faculty of vision, which could at all obstruct the performance of their proper office.

Mr. Ware, in his treatise on this disease, mentions that a dilatation of the arterial circle, surrounding the sella turcica (which is formed by the carotid arteries on each side, by branches passing from them to meet each other before, and by other branches passing backward to meet branches from the basilary artery behind,) may likewise be a cause of gutta serena. The anterior portion of this circle passes over the optic nerves, which undoubtedly may therefore become compressed, when any enlargement of these vessels takes place.

A dilatation of the artery which passes directly through the centre of the optic nerve to the retina, may, it is presumed, likewise become a cause of defective vision.

The proximate cause of amaurosis is generally allowed to be the insensibility of the retina.

Violent contusions of the head; apoplectic fits; sudden flashes of lightning; frequent exposure to the rays of the sun; severe exercise and strong passions, especially terror and anger; drunkenness; immoderate venery; and all those causes which predispose to nervous and paralytic affections, may give rise to amaurosis.

Gutta serena, although considerably relieved in some instances, proves generally an incurable disease.

Its treatment is usually regulated on the plan of stimulating either

the parts themselves, or the system in general. The first is to be done by applying blisters and issues behind the ears or at the back of the neck, and continuing them for a considerable length of time; by promoting a discharge from the nose by means of errhines,* and by stimulant collyriums.

Electricity has been employed in some cases with the happiest effect, when other remedies have failed, by passing very slight shocks through the forehead twice a day. Galvanism has likewise been resorted to with advantage. Dr. Darwin records† the case of a lady who laboured under gutta serena, and whose sight was restored by these means. He adopted the experiment of Volta, by employing two rods, one of them of zinc, about the size of a writing pencil, and the other a silver pencil-case about the same size; and by putting the end of the zinc rod in contact with the external corner of one eye, and the end of the silver pencil-case in contact with the external corner of the other eye, and then repeatedly making the other ends touch each other; sparks were visible in the eyes both at the time of contact and at the time of separating the two rods. He mentions that she took valerian and columbo at the same time, and perfectly regained her sight in about three weeks.

Mr. Ware informs us, that in several instances of common gutta serena, he observed considerable relief to be obtained by the use of a snuff composed of ten grains of turbith mineral, with about a drachm of the pulvis sternutatorius; or in the place of that, the glycirrhiza, or saccharum commune.

Stimulants have been applied immediately to the eyes, in some cases of gutta serena, with a good effect, but more particularly in those which seem to depend upon an inirritability of the optic nerve. In such cases, an infusion of dried capsicums in water, in the proportion of one grain to the ounce, may be made use of, dropping a few drops into the eyes morning and evening. The severity of the pain may be great at first from this application, but, by perseverance, it will be found to abate.

To stimulate the system, it is customary to have recourse to mercury, which is to be used and to be continued until it produces some sensible effect. In that form of the disease which is accompanied with a contracted state of the pupil, and which has been produced, probably, by an internal ophthalmy, Mr. Ware is of opinion, that it may best be relieved by the internal use of the hydrargyrus muriatus, a quarter of a grain for a dose.

Where the disease seems to arise from a dilatation of the anterior portion of the circulus arteriosus, as before mentioned, he thinks the cause may often be removed by topical bleeding, purging, blistering,

† See Zoonomia, Vol. iii. Class 1, 2. 5. 5.

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* ℞. Pulv. Afari Compofit. Pharmacop. Londinenfis.

Vel

℞. Hydrargyr. Vitriolat. gr. j.
Pulv. Glycirrhiz. gr. vj.
—— Helleb. Alb. gr. ij. M.

&c.; but unfortunately we have no criterion to distinguish this from other causes; and this state of the parts can only be inferred from a plethoric habit of body in the patient.

In those cases which seem to depend upon a relaxation of the optic nerve, the means advised under the head of Nyctalopia may be proper.

We are informed by Dr. Richter, professor of medicine in the university of Gottingen, in a publication which bears the title of Medical and Surgical Observations, that he has lately restored to sight several patients who laboured under gutta serena. In all those cases, he thinks the cause of the disease seemed to be seated in the abdominal viscera; for he cured them all, he says, by means of medicines which remove obstructions in the viscera and evacuate. He affirms, that in this way he has not unfrequently performed a complete cure, in cases where he hardly expected it, and in some where the disease had actually continued for several years.

After vomiting, he recommends the pills mentioned below;* and he says, it is often necessary to persevere in the use of these remedies six or eight weeks before any amendment is perceived. A gradual increase of the dose is also requisite. A disappearance of the fiery sparks from before the eyes, and of the sensation of tension in their balls, are the first symptoms he observes of amendment, which give reason to hope for success in the cure of gutta serena.

Costiveness should carefully be obviated in all cases of amaurosis.

Of DEAFNESS, or PARACUSIS.

DEAFNESS is occasioned by any thing that proves injurious to the ear, as loud noises from the firing of cannon, violent colds, particularly affecting the head, inflammation or ulceration of the membrane, hard wax, or other substances interrupting sounds; too great a dryness or too much moisture in the parts; or by atony, debility, or paralysis of the auditory nerves. In some instances, it ensues in consequence of preceding diseases, such as fever, syphilis, &c.; and in others, it depends upon an original defect in the structure or formation of the ear. In the last instance, the person is usually not only deaf, but likewise dumb.

It is often difficult to remove deafness, but more especially where it prevails as a consequence of a wound, ulcer, or inflammation of the tympanum. Where it proceeds from malconformation, it admits of no cure.

When deafness is occasioned by wax sticking in the ear, or by any

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* ℞. Gum. Ammon.
—— Asafœtid.
Pulv. Rad. Valerian.
—— Summitat. Arnic.
Sapon. Venet. āā ʒij.
Antimon. Tartarisat. gr. xviij.
Syrup. q. s. M.
fiᵗ Pilul. pond. gran. ij. quar. sumat ter quotid. No. xv.

defective or diseased actions of the glandulæ ceruminæ, a little of either of the remedies here * advised may be dropped into it; or be applied at the end of a small dossil of cotton every morning and night, previously syringing it with a little warm milk and water, or soap and water. If a thin acrid or fetid discharge accompanies the difficulty of hearing, it will be advisable to apply a small blister behind the ear, and to render it perpetual by dressing it with the unguentum cantharidis.

When the disease proceeds from cold particularly affecting the head, the patient should be careful to keep this warm by night; the effects of which may be increased by putting the feet into warm water previous to his getting into bed, and taking some proper diaphoretic. Indeed, from whatever cause the disorder may originate, it will always be proper to keep the head warm.

If deafness seems to be owing to a debility of some part of the organ, or arises in consequence of any nervous affection, it is then to be removed by stimulants† dropped into the ear; by drawing sparks with an electrical machine; by galvanism, and by cold bathing. Æther dropped into the ears of some people who are deaf, seems to possess a twofold effect; one, of dissolving the indurated wax; and the other, of stimulating the torpid organ: but it is liable to excite some degree of pain unless it be freed from the sulphureous acid, some of which arises along with it in distillation. To purify it from this, it should be rectified from manganese.

In that particular species of deafness which depends on a defective energy of the auditory nerve, we are told by Mr. Wilkinson ‡ that galvanism is capable of effecting a cure. He observes that this species of deafness is ascertainable by the common practice of placing a sonorous body in contact with the teeth. If the communication of sound should not be thus rendered more distinct, we may conclude that the defect originates in the nerve; seeing that, provided the deafness has been owing to any derangement of the other parts of the ear, the sound, transmitted by the medium of the teeth through the connecting bony substance to the seat of hearing, would have been distinctly perceived.

In several cases, where the deafness seemed to have arisen from a relaxation of the membrana tympani, attended by a diminished secretion of cerumen, Mr. Wilkinson experienced good effects from the employment of galvanism, which not only induced a grateful warmth in the meatus, but also considerably augmented the secretion of wax.

Where the disease is the effect of fever, it usually goes off as the patient regains his strength.

‡ See his Elements of Galvanism.

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* ℞. Fellis Bovis ʒiij.
Balsam. Peruv. ʒj. M.
Vel
℞. Natri Muriati ʒj.
Aquæ Distillat. q. s. ad solutionem.

† ℞. Ol. Amygdal. Dulc. ℥fs.
— Terebinth. gutt. xl. M.
Vel
℞. Ol. Olivæ ℥fs.
Aq. Ammon. Pur. gutt. xxx. M.
Vel
℞. Æther. Sulphuric.

To assist the hearing of persons who are deaf in a high degree, we may recommend the use of an ear-trumpet, vulgarly so called.

In that species of deafness which arises from an obstruction of the Eustachian tube, Mr. Astley Cooper recommends the puncturing of the membrana tympani.* He was led to this operation by reflecting that, as an aperture in this membrane did not appear to injure the power of the ear, and a small opening would be sufficient to admit a free passage of air to and from the tympanum, perhaps a substitute might be thus easily found for the Eustachian tube, and the membrane by such an aperture be restored to its natural functions. He observes, that there are several causes by which a closure of the Eustachian tube may be produced.

It may arise, first, from a common cold affecting the parts contiguous to the orifices of the tube, and thereby preventing the free passage of air into the tympanum. The deafness thus produced, however, is often only temporary; but the frequent recurrence of such attacks may produce a permanent enlargement of the tonsils, which, by their pressure on the Eustachian tubes, will occasion a constant deafness.

Secondly, The scarlet fever causes ulcers in the throat, which in healing, frequently close the Eustachian tube, thereby producing lasting deafness.

Thirdly, A venereal ulcer in the fauces, by the cicatrix it produces, often occasions a closure of the Eustachian tube, causing a deafness, which nothing but the operation here spoken of can relieve.

Fourthly, He has known this closure of the tube produced by an extravasation of blood in the cavity of the tympanum.

Lastly, He met with one instance of a stricture in the tube, which although it did not entirely obstruct the passage of the air, yet rendered it extremely difficult. In this the gentleman who was the subject of the disease, in order to enable himself to hear, was under the necessity of forcing air from the mouth into the cavity of the tympanum, which pressed the membrana tympani towards the meatus: then by pressing gently on the ear, he forced out a part of the air which the tympanum contained; thus giving the membrane liberty to vibrate, and producing an immediate increase in the power of hearing.

As the operation will not afford relief in any cases of deafness, except such as arise from a closed Eustachian tube, Mr. Astley Cooper is anxious that it should be performed in those only which are clearly of that description. The criteria by which he judges whether the tube is closed or open, are the following:

"First, If the person in whom it is suspected to be closed should feel, in blowing the nose violently, a swelling in the ear, from the membrane being at that time forced outward, the tube is open; for, when closed, no such sensation is produced.

"Secondly, The Eustachian tube may be closed, yet the beating of a watch may be heard, if it be placed between the teeth, or pressed

* See Philosophical Transactions of the London Royal Society for 1801.

against the side of the head; and if it cannot be heard when it rests upon the teeth, this operation cannot relieve, as the power of the auditory nerves must have been destroyed.

"Thirdly, It is right to inquire if the deafness was immediately preceded by any complaint in the throat.

"Lastly, In a closed Eustachian tube there is no noise in the head like that which is known to accompany nervous deafness. This species of deafness generally approaches in a gradual manner; the person hears better at one time than at another; a cloudy day, a warm room, agitated spirits, or the operation of fear, produce a considerable diminution in the powers of the organ. In the open air, the hearing is better than in a confined situation; in a noisy, than in a quiet society; in a coach when it is in motion, than when it is still. A pulsation is often felt in the ear; a noise resembling sometimes the roaring of the sea, and at others the ringing of distant bells, is heard. This deafness begins generally in a diminished secretion of the wax of the ear, which the patient attributes to some unusual exposure of the head to cold; and this continues as long as the disorder remains."

ORDER II.

DYSOREXIÆ.

FALSE or defective appetite.

Of the CANINE APPETITE, or BULIMIA.

THIS disease is the direct opposite of anorexia, as the patient is affected with an insatiable and almost perpetual desire of eating, in which if he is not indulged, he is apt to fall into fainting fits.

With its real causes we seem not to be very well acquainted. In some cases it has been supposed to proceed from an acid in the stomach; and in others from too great a sensibility or peculiar affection of its nervous coat. In most instances it ought, in my opinion, to be considered as depending more frequently on monstrosity than disease.

In the third volume of the Medical and Physical Journal* is reported an extraordinary and well-attested case of this nature in a French prisoner, who in one day consumed of

Raw cow's udder	4 lbs.
Raw beef	10
Candles	2
Total . . .	16 lbs.

Besides five bottles of porter.

It appears from Dr. Cochrane's report of this case, as inspector and surgeon of the prison in Liverpool, where this cannibal was confined, that the fæces were by no means in proportion to the ingesta, and in-

* See page 209.

deed seldom exceeded those of other men, and that with the ordinary allowance of drink, the quantity of urine was not more than a quart a day: neither was it more offensive than that of other men, but there was a constant propensity to exhalation from the surface of his body, and soon after his getting into bed he was usually attacked with such a profuse sweating, as to oblige him to throw off his shirt. In this case it is therefore evident that the recrementitious parts of the aliment were evacuated principally by the skin, and the same may probably happen in most cases of bulimia.

Another singular case of voracious appetite has lately been reported to the National Institute by M. Percy, a surgeon in chief to the French army. A young man from the neighbourhood of Lyons, named Tarare, and who early in life belonged to a troop of strolling jugglers, accustomed himself to swallow flints, enormous quantities of broken victuals, baskets-full of fruits, and even living animals. The most alarming symptoms endured in consequence were not sufficient to overcome this dangerous habit, which became at last an imperious necessity.

Enrolled at the commencement of the late war in one of the battalions of the army of the Rhine, he sought for the necessary supply of food around the moveable hospital. The refuse of the kitchen, the remains of the messes, the rejected matters, or corrupted meats, did not suffice him. He often disputed with the vilest animals their filthy and disgusting meal: he was perpetually in search of cats, dogs, and even serpents, which he devoured alive. He was obliged to be driven by force or threats of punishment from the dead room and the places where the blood drawn from the sick was deposited. It was in vain attempted to cure his ravenous appetite by giving him fat, acids, opium, and even pounded shells. The disappearance of a child of sixteen months old gave birth to horrible suspicions of him, and he fled. Five or six years afterwards he was admitted into the Infirmary of Versailles in a consumptive state, which succeeded his enormous appetite. He soon after died.

Mons. Tessier, chief surgeon of the infirmary, had the courage to examine the body, notwithstanding an abominable odour exhaled from it. The stomach was of an extraordinary capacity; the intestines were ulcerated and remarkably distended, and the gall-bladder was of a very large size.

Tarare was small in stature, flabby, and weak; his countenance had nothing ferocious in it. When he had fasted for a time, the skin of his belly could be almost wrapped round him; and when full, he appeared as if dropsical. A thick vapour issued in torrents from his mouth; all his body smoked; the sweat flowed abundantly from his head; and, like other voracious animals, he slept during the time of digestion.

When a ravenous appetite is occasioned by an acidity in the stomach, this ought to be corrected by an emetic, with the after-use of alkalies.

Where the power of the stomach in quickly dissolving, assimilating, and disposing of the aliment, is so great as in the case just mentioned, we probably may be able to allay its contractile force by oil, fat meats,

opiates, and a free use of tobacco, which may both be chewed and smoked. The aquæ kali administered in doses of about five-and-twenty or thirty drops in a little veal broth, and repeated twice a day, might probably have a good effect.

A medical friend has communicated a case of bulimia to me, which was cured by confining the patient to a diet consisting wholly of eggs boiled to a very hard consistence; and these he carried constantly about with him, in order to satiate his appetite whenever it became craving.

Of FUROR UTERINUS, or NYMPHOMANIA.

THIS disease comes on with melancholy, lascivious casting about of the eyes, and frequent sighing; and as it increases the face becomes red and flushed, and the woman makes use of libidinous gestures and speeches, and shews an immoderate desire for coition.

It frequently arises either from inflammation of the pudenda, or from an acrimony in the fluids of the parts. In most instances it ought to be considered as a high degree of hysteria, or as a species of madness.

When the disease is the consequence of local inflammation, we must resort to bleeding and cooling laxative medicines, together with refrigerants, such as nitre, and the topical application of sedative lotions.* Internally we may likewise employ camphor combined with opium.†

If it proceeds from acrid matter, the patient must drink plentifully of cooling demulcent liquors. Injections of the same nature may also be thrown up the vagina; the parts be washed with a sedative lotion as just advised, or be anointed with some soothing liniment;‡ and opium be administered in small and frequently repeated doses.

The diet is to be cooling and light, consisting principally of vegetables and milk; and every thing that might prove an additional stimulus should be avoided.

DEFECTIVE APPETITES.

Of a LOSS of APPETITE, or ANOREXIA.

A WANT of appetite and loathing of food is not usually an original affection, but prevails as a symptom of some other disease, such as dys-

* ℞. Aq. Diſtillat. ℥iv.
—— Litharg yr. Acet. gutt. xxv.
Tinct. Opii Vinos. gutt. xl.
Vel
℞. Aq. Ammon. Acetat.
— Diſtillat.
Spirit. Vin. Rectif. āā ℥ij.
Tinct. Opii Vinos. gutt. L. M.

† ℞. Camphor. gr. vj.—xij.
Nitri gr. x.
Opii gr. ſs.
Conſerv. Roſæ q. s. M.
ft. Bolus ter quaterve die ſumendus.

‡ ℞. Unguent. Sperm. Ceti.
—— Cerusſ. Acetat. āā ℥ſs. M.
Vel
℞. Zinci Vitriolat.
Cerus. Acetat. āā gr. xv.
Adipis Suillæ ℥ſs.
Opii Pulv. ℥ſs. M.

pepsia, and is therefore to be obviated by aromatics, bitters, cinchona joined with sulphuric acid, chalybeates, &c. as advised under that head.

In spontaneous anorexy, where the stomach is loaded with bile or crudities, an emetic in the evening, with some kind of stomachic purgative the next morning, will seldom fail to effect a cure.

Of IMPOTENCY, or ANAPHRODISIA.

In some cases this disease is owing to an original defect in the organs of generation; but it more usually arises either from topical weakness, brought on by excess in venery or onanism; or from great debility in the system, produced by severe evacuations, preceding diseases, or the want of nutritive food. In a few instances it may be occasioned probably by a want of sufficient confidence, or a degree of fear at the time.

Where the disease proceeds from an original defect in the organs of generation, it will not be possible to effect a cure. When it depends upon some disease of the parts, this must be removed by the means which have been pointed out as most proper.

If it arises in consequence of general weakness, the system is to be strengthened by a generous nutritive diet; by cold bathing both general and topical; by the Peruvian bark, myrrh, chalybeates, and other tonics, as advised under the head of Dyspepsia. Stimulants, such as cantharides,* might likewise be of service if given in small doses.

ORDER III.

DYSCINESIÆ.

Obstructed or depraved motions, from fault in the organs.

Of SQUINTING, or STRABISMUS.

SQUINTING is generally owing to one eye being less perfect than the other; on which account the person endeavours to hide the worst eye in the shadow of the nose, that his vision by the other may not be confused. Sometimes the habit is acquired, and cannot afterwards be easily corrected.

Where squinting has not been confirmed by long habit, and one eye

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* ℞. Cantharid. gr. xviij.
Opii
Camphoræ āā gr. xxxvj.
Conferv. Cynosbat. q. s. M.
Fiant Pilulæ xxxvj. Capiat j.—ij. omni nocte hora decubitus.
Vel
℞. Decoct. Cinchon. ℥j.
Tinct. Cinnam. C. ʒij.
——— Cantharid. gutt. xij. M.
ft. Haustus bis in die sumendus.

is not much worse than the other, we are told * the defect may often be obviated by making the child wear, for some hours every day, a piece of gauze stretched on a circle of whalebone over the best eye, in such a manner as to reduce the distinctness of the vision of this eye to a similar degree of imperfection with the other; or the better eye may be totally darkened by a tin cup covered with black silk for some hours daily, by which means it will be gradually weakened by the want of use, and the defective eye will be gradually strengthened by using it.

ORDER IV.

APOCENOSES.

UNUSUAL flux of blood or other humours, without pyrexia, or increased impetus of the fluids.

OF IMMODERATE SWEATING, OR EPHIDROSIS.

THIS is usually a symptomatic affection, but it nevertheless sometimes prevails as an idiopathic disease, and then is commonly owing to general weakness and debility, accompanied with a preternatural determination to the surface of the body. It is generally to be met with in the last stage of pulmonary consumption.

The cure is to be effected by covering the body lightly with apparel and bed-clothes; by keeping the chamber of a moderate temperature; by determining from the surface of the body, by means of diuretics and gentle laxatives; and, lastly, by strengthening the system by chalybeates and other tonic medicines, cold bathing, and the means advised under the head of Dyspepsia, avoiding at the same time too long an indulgence in bed, and a use of warm slops.

In the colliquative sweating which attends hectic fever and phthisis pulmonalis, the diluted sulphuric acid is much employed.

OF AN INCONTINENCY OF URINE, OR ENEURESIS.

THIS disease usually proceeds either from relaxation or a paralytic affection of the sphincter of the bladder, induced by various debilitating causes, such as too free a use of spirituous liquors, masturbation, and excess in venery; or it arises from compression on the bladder, from a diseased state of the organ, or from some irritating substance contained in its cavity.

When it prevails in consequence of relaxation in the parts, the cure is to be attempted by general and topical cold bathing, but more particularly the latter; by blisters applied to the perinæum, and by an internal use of chalybeates and other tonics, as advised under the head of Dyspepsia. The uva ursi taken from a scruple to half a drachm twice or thrice a day, drinking about half a pint of lime-water after each dose, may likewise be of some service.

* See Darwin's Zoonomia, Vol. iii. Clafs 1. 2. 5. 4.

Should the disease be owing to a paralysis of the bladder, besides applying a blister to the perinæum and making use of electricity to the parts, we should give the patient medicines of a stimulating nature, such as cantharides.

When it is occasioned by any extraneous substance lodged in the bladder, such as a stone, we cannot effect a cure but by removing this.

As arising from pregnancy, it is only to be relieved by delivery; but possibly it may be palliated by confining the woman as much as possible to an horizontal posture.

To prevent in men the urine from galling and excoriating the parts, it will be necessary for the patient to wear some vessel adapted to the penis, that will receive it as it drops; or he may employ a jugum penis, which will obviate its being evacuated involuntarily. Women may use a sponge so fastened as to absorb the moisture.

Of an INVOLUNTARY EMISSION of the SEMEN, or GONORRHŒA DORMIENTIUM.

An involuntary emission of semen during sleep sometimes proceeds from general debility, but is more usually the effect of a weakness of the seminal vessels in consequence either of excessive venery or onanism. In a few instances it may probably be occasioned by a repletion of these vessels.

The disease is often difficult to remove, and in many cases proves incurable.

Its cure, however, is to be attempted by the patient's abstaining from the remote causes depending upon his will; by a generous and nutritive diet; by cold bathing, both local and general; by balsams;* by chalybeates,† the Peruvian bark, and other astringent bitters, as advised under the head of Dyspepsia; and by the application of a blister to the perinæum.

In preventing an involuntary discharge of semen, and obviating the debility of the parts, a use of Spa water has often proved very serviceable. It is a strongly acidulous chalybeate water, containing more iron, and especially more carbonic acid than any we have in this country.

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* ℞. Bals. Copaib. ʒj.
Vitel. Ovi Uni. Terantur in mortario marmor. et adde gradatim
Tinct. Benz. C. ʒfs.
Aq. Fontan. ℥vfs.
Syrup. Althææ ʒfs. M.
ft. Mist. cujus sumat Cochl. ij. ter quaterve in die.

† ℞. Gum. Oliban.
—— Myrrh.
Extract. Gentian. āā ʒj.
Ferri Vitriolat. ℈j.
Bals. Copaib. q. s. M.
ft. Massa in pilul. L. distribuenda, quarum sumat iv. ter in die.
Vel
℞. Zinc. Vitriolat. gr. xxiv.
Extract. Chamæmel. ʒfs.
—— Cinchon. ʒj. M.
Fiant Pilul. No. xxiv. Capiat j.—ij. manè et nocte quotidie.

Of the WHITES, LEUCORRHŒA, or FLUOR ALBUS.

THIS disease is marked by the discharge of a thin white or yellow matter from the uterus and vagina, attended likewise with some degree of fœtor, smarting in making water, pains in the back and loins, anorexia, and atrophy. In some cases the discharge is of so acrid a nature, as to produce effects on those who are connected with the woman, somewhat similar to venereal matter, giving rise to excoriations about the glans penis and preputium, and occasioning a weeping from the urethra.

To distinguish leucorrhœa from gonorrhœa, it will be very necessary to attend to the symptoms. In the latter, the running is constant, but in a small quantity; there is much ardor urinæ, itching of the pudenda, swelling of the labia, increased inclination to venery, and very frequently an enlargement of the glands in the groin; whereas in the former, the discharge is irregular, comes away often in large lumps, and in considerable quantities, and is neither preceded by, nor accompanied with any inflammatory affection of the pudenda.

Immoderate coition, injury done to the parts by difficult and tedious labours, frequent miscarriages, immoderate flowings of the menses, profuse evacuations, poor diet, an abuse of tea and other warm slops, an inactive and sedentary life, and other causes giving rise to general debility, or to a laxity of the parts more immediately concerned, are those which usually produce the whites, vulgarly so called, from the discharge being commonly of that colour.

Fluor albus, in some cases, indicates that there is a disposition to disease in the uterus, or parts connected with it, especially where the quantity of the discharge is very copious, and its quality highly acrimonious. By some, the disorder has been considered as never arising from debility of the system, but as being always a primary affection of the uterus. Delicate women with lax fibres, who remove from a cold climate to a warm one, are, however, to my knowledge very apt to be attacked with it, without the parts having previously sustained any kind of injury.

The disease shews itself by an irregular discharge, from the uterus and vagina, of a fluid, which in different women varies much in colour, being of a white, green, yellow, or brown hue. In the beginning, it is, however, most usually white and pellucid, and in the progress of the complaint acquires the various discolourations, and different degrees of acrimony; from whence proceeds a slight smarting in making water. Besides the discharge, the patient is frequently afflicted with severe and constant pains in the back and loins, loss of strength, failure of appetite, dejection of spirits, paleness of the countenance, chilliness, and languor. Where the disease has been of long continuance, and very severe, a slow fever attended with difficult respiration, palpitations, faintings, and anasarcous swellings of the lower extremities, often ensues.

A perfect removal of the disorder will at all times be a difficult matter to procure; but it will be much more so in cases of long standing, and where the discharge is accompanied with a high degree of acrimony. In these cases, many complaints, such as prolapsus uteri, ulcerations of the organ, atrophy, and dropsy, are apt to take place, which in the end prove fatal.

Where the disease terminates in death, the internal surface of the uterus appears, on dissection, to be pale, flabby, and relaxed; and where organic affections have arisen, much the same appearances are to be met with as have been noticed under the head of Menorrhagia.

The proper indications of cure to be observed in fluor albus, seem to be, to increase the action of the absorbents of the uterus and vagina, by restoring the tone of the parts; to correct the acrimony of the discharge, diminish its quantity, and alleviate other urgent and distressing symptoms; and thirdly, to strengthen the system when the disease is complicated with general debility and relaxation.

The first of these intentions is to be effected by astringents administered by the mouth, and likewise thrown up into the vagina and uterus, in the form of injections.* Alum, vitriolated zinc, gum kino, and catechu, are the astringents which are most employed as internal remedies: and these may be given either separately, or combined with some tonic, such as the cinchona, bitters, chalybeates, and the sulphuric acid, as advised below,† or recommended under the head of Menorrhagia, together with partial cold bathing, by sprinkling or sponging the loins and thighs with cold water.

Besides astringents, it has been usual to employ, in this disease, such stimulating medicines as are most commonly determined to the urinary passages, which, from their vicinity to the uterus, have often been found to afford considerable relief. Turpentine, and other balsams, such as bals. copaibæ vel Canadense, with many more of a like nature,

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* ℞. Zinc. Vitriolat. ʒj.
Cerusſ. Acetat. gr. x.
Aq. Diſtillat. ℔j. M.
ft. Inject.

Vel

℞. Decoct. Cort. Querc. ℔j.
Aluminis ʒj. M.

Vel

℞. Gall. Contus. ʒſs.
Aq. Fervent. ℔ij. M.

† ℞. Alum. Rup. Pulv. ʒij.
Ras. Nuc. Mosch. ʒſs.
Terr. Catechu ʒj.
Pulv. Cinchon. ʒſs.
Syr. Zingib. q. s. M.
ft. Electuarium cujus sumat quant. juglandis ter in die.

Vel

℞. Alum. Rup. Pulv. gr. x.
Terr. Catechu gr. v.
Gum. Kino. gr. vj.
Conſerv. Roſæ q. s. M.
ft. Bolus ter quaterve die ſumendus.

Vel

℞. Extract. Cinchon.
Gum. Kino āā ʒj.
Alum. Rup. ʒſs.
Ras. Nuc. Moſch. ℈j.
Syrup. Simp q. s. M.
ft. Maſſa in Pilul. xxxvj. divid. quarum ſumat iij. bis terve in die cum Cyath. Seri Aluminosi.

have been used on the occasion.* The tincture of cantharides has likewise been much administered with the same view; and, indeed, in several obstinate cases, I have used it with much advantage. It may be joined with some tonic, as below.†

The application of a blister to the sacrum, has in some cases been attended with advantage.

Stimulating the intestines and rectum by giving small doses of rhubarb, or the pilulæ ex aloe cum myrrha, every night on going to bed, for a considerable length of time, has likewise been found serviceable.

Gentle emetics have also been supposed to be of singular utility in fluor albus, not only by cleansing the stomach and bowels, and making a revulsion of the humours from the inferior part of the body, but likewise by their exciting all the powers of the constitution to a more vigorous action.

To answer the second intention, of correcting the acrimony of the discharge and lessening its quantity, a diligent attention must be paid to cleanliness, by washing the parts frequently with cold water, or a little milk and water, and then throwing astringent medicines up the vagina. These may consist of a strong infusion of green tea, or a solution of alum, or vitriolated zinc in the proportion of a drachm of the latter to a pint of water, or the decoctum quercus, or infusum corticis granati. When there are excoriations either externally, or internally, the aqua lithargyri acetata, diluted sufficiently with water, may be employed as a wash.

The pains in the back and loins are to be relieved by enveloping them with the emplastrum thuris spread upon coarse linen or leather, and by avoiding a standing posture of long continuance, much walking, dancing, or any other violent exertion.

Languor, debility, and faintings are to be obviated by a generous

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* ℞. Terebinth. Vulg. ʒij.
Pulv. Cinchon. ʒvj.
Mel. Optim. ʒj. M.
ft. Electuarium. Capiat. ʒij. pro dos. bis terve die.

Vel

℞. Terebinth. Vulg. ʒij.
Pulv. Rad. Rhab. ʒj.
—— Aromat. ʒfs. M.
fiant Pilul. L. quarum fumat ij. ad iij. bis in die.

Vel

℞. Zinc. Vitriolat. ʒfs.
Pulv. Catechu ʒij.
Terebinth. Vulg. q. s. M.
ft. Pilul. 45. Capiat ij. vel. iij. mane et vespere.

Vel

℞. Gum. Oliban. Pulv.
Bals. Copaib. āā ʒfs.
Pulv. Rhabarb. ʒj.
—— Gentian. ʒfs.
Conserv. Rosæ ʒiij.
Syr. Zingib. q. s. M.
ft. Elect cujus nuc. moschatæ magnitud. fumat bis in die.

Vel

℞. Bals. Copaib. ʒj.
Vitell. Ovi Un. Terantur in Mortario marmor. et adde gradatim
Aq. Fontan. ʒvij.
Mellis Despum. ʒj.
Tinct. Cantharid. ʒj. M.
Capiat. Cochl. ij. ter in die.

† ℞. Infus. Gentian. C. ʒj.
Tinct. Cinchon. ʒij.
—— Cantharid. gutt. x.—xxx. M.
ft. Hauſt. bis terve in die ſumendus.

nutritive diet, consisting of milk, with isinglass boiled up in it, blanc-mange, jellies, eggs, sago, gelatinous broths, and light meats, together with cordial medicines, but more particularly red port wine.

To strengthen the general system, where the disease is complicated with universal debility, besides the restorative means just mentioned, we must have recourse to bitters of an astringent and stomachic nature, the Peruvian bark, preparations of steel, the use of mineral waters, cold bathing both topical and general, and other tonics, as advised under the head of Dyspepsia.

Women that are afflicted with fluor albus, should avoid all the remote causes of the disease, and by no means indulge in the use of tea, and other warm slops of a relaxing nature; they should lie on a mattress in preference to a feather-bed; they should avoid too free an indulgence in sensual gratification, and they should rise early, and take such daily exercise as their strength will admit, particularly on horseback. Where there is much languor, with a considerable degree of chilliness, it is probable that frictions with flannels might afford some relief. In winter, they ought to wear a flannel shift or sliders.

ORDER V.

EPISCHESES.

SUPPRESSION of excretions.

OF COSTIVENESS, OR OBSTIPATIO.

COSTIVENESS is to be considered either as constitutional or symptomatic; but in general, it prevails as the latter.

The word implies a retention of the excrements, accompanied with an unusual hardness and dryness, so as to render the evacuations difficult, and sometimes painful.

Sedentary persons are peculiarly liable to this complaint, especially those of a sanguineous and choleric temperament; or who are subject to hypochondriac affections, the gout, acute fevers, and bilious disorders.

Costiveness is frequently occasioned by neglecting the usual time of going to stool, and checking the natural tendency to those salutary excretions; by an extraordinary heat of the body, and copious sweats; by receiving into the stomach a larger proportion of solid food, than is proper for the quantity of fluids swallowed; by a free use of opium, and by taking food that is dry, heating, and difficult of digestion. Drinking freely and frequently of red port wine may likewise occasion costiveness.

With the defect of stools, there sometimes exist nausea, want of appetite, flatulency, pains in the head, and a degree of febrile heat.

The disease is to be obviated by an attention to diet, by observing certain regular periods, and, where these fail, by having recourse to laxatives.

The diet of such as are of a costive habit, ought to consist a good

deal of vegetables and ripe fruits, and their ordinary drink of malt liquors.

With respect to the second object to be attended to, a habit of regularity should be endeavoured to be established by the person's going at a certain hour or hours each day, and making proper efforts at each period for promoting an evacuation. If a natural inclination arises at any time, this ought likewise to be encouraged.

The laxatives most proper for obviating costiveness are those which afford the least irritation,* but which will at the same time procure one or two motions daily.

Persons of a costive habit of body, and particularly pregnant women, are very apt to make use of Anderson's Pills, which are composed wholly of aloes, with a little oil of aniseed to prevent the griping effect of the former; and, indeed, these pills have acquired an extensive reputation. In phlegmatic constitutions, they may indeed be used occasionally with some advantage possibly; but in pregnant women, or those of a bilious habit, where the bowels are naturally irritable, they cannot fail to do harm. Their operation is confined, in a great measure, to the lower part of the rectum, and they are thereby apt to induce piles. The use of every purgative medicine moreover creates a necessity for its repetition, and by this repetition the bowels lose their energy, their delicate nerves become torpid to the stimulus of the food and drink, and the secretions formed from them. A natural discharge of the contents of the bowels ought therefore to be solicited by those of a costive habit, in preference to the use of any kind of purgative whatever.

In those cases where inveterate costiveness has once taken place, and the usual simple remedies have proved abortive, carbon or charcoal divested of heat has been administered with uncommon success. It is reported to have procured the desired relief in every instance. Three drachms of it finely levigated may be mixed with three ounces of the electuarium e senna, adding about two drachms of the carbonat of soda. Of this mixture from half an ounce to one ounce may be taken as circumstances require.

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* ℞. Kal. Tartarisat. ℥ss.
Mann. Optim. ℥ij.
Aq. Fervent. ℥iij.
Tinct. Jalap. ℥ij. M.
Capiat dimidium pro dos.

Vel

℞. Fol. Sennæ ℥ij.
Aq. Font. ℥x.
Coque ad ℥vj. et
Colat adde
Cryst Tartar. ℥j.
Syrup. Spin. Cerv. ℥ij. M.
Sumat ℥ij. pro dos. et repetatur post horas tres, si sit necessitas.

Vel

℞. Ol. Ricini ʒvj.
Mucil. Gum. Arab. ℥ss. Terantur simul, et adde
Aq. Cinnam. ℥ss.
Tinct. Sennæ C. ʒj. M.
ft. Haustus.

Vel

℞. Elect. e Senna ℥ij.
Cryst. Tartar. ʒij.
Pulv. Jalap. ℥j.
Syrup. Zingib. q. s. M.
ft. Electuarium cujus sumat quantitatem juglandis hora somni.

Of a SUPPRESSION and DIFFICULTY of URINE, or ISCHURIA and DYSURIA.

WHEN there is a frequent desire of making water attended with much difficulty in voiding it, the complaint is called a dysury or strangury; and when there is a total suppression of urine, it is known by the name of an ischury. Both ischuria and dysuria are distinguished into acute, when arising in consequence of inflammation, and chronic, when proceeding from any other cause, such as calculus, &c.

The causes which give rise to these diseases are, an inflammation of the urethra, occasioned either by venereal sores, or by a use of acrid injections, tumour or ulcer of the prostate gland, inflammation of the bladder or kidneys, considerable enlargements of the hemorrhoidal veins, a lodgment of indurated fæces in the rectum, spasm at the neck of the bladder, the absorption of cantharides applied externally or taken internally, and excess in drinking either spirituous or vinous liquors; but particles of gravel sticking at the neck of the bladder, or lodging in the urethra, and thereby producing irritation, prove the most frequent cause. Gout, by being translated to the neck of the bladder, will sometimes occasion these complaints.

In dysury there is a frequent inclination to make water, attended with a smarting pain, heat, and difficulty in voiding it, together with a sense of fulness in the region of the bladder. The symptoms often vary, however, according to the cause which has given rise to it. If it proceeds from a calculus in the kidney or ureter, besides the affections mentioned, it will be accompanied with nausea, vomiting, and acute pains in the loins and region of the ureter and kidney of the side affected. When a stone in the bladder or gravel in the urethra is the cause, an acute pain will be felt at the end of the penis, particularly on voiding the last drops of urine, and the stream of water will either be divided into two, or be discharged in a twisted manner, not unlike a cork-screw. If a scirrhus of the prostate gland has occasioned the suppression or difficulty of urine, a hard indolent tumour unattended with any acute pain may readily be felt in the perinæum, or by introducing the finger in ano.

Dysury is seldom attended with much danger, unless by neglect it should terminate in a total obstruction. Ischury may always be regarded as a dangerous complaint when it continues for any length of time, from the great distention and often consequent inflammation which ensue. In those cases where neither a bougie nor a catheter can be introduced, the event in all probability will be fatal, as few patients will submit to the only other means of drawing off the urine before a considerable degree of inflammation and tendency to gangrene have taken place.

When a dysury has arisen in consequence of the application of a blister, as sometimes happens, nothing more will be necessary than to

direct the patient to drink plentifully of warm diluent liquors, such as a thin solution of gum arabic, linseed-tea, or barley-water. When it proceeds from any other cause, and the symptoms are violent, besides the means just mentioned, flannel cloths wrung out in a warm decoction of emollient herbs, or a bladder filled with warm water, should be kept constantly applied over the region of the pubes, and emollient clysters should be injected frequently, both with the view of acting as an internal fomentation, and of dislodging any indurated fæces that may be collected, and which by their pressure and stimulus will of themselves often produce a strangury, or difficulty of making urine.

In an ischury it will always be advisable to guard against the taking place of any degree of inflammation, by drawing off from the arm a quantity of blood proportionable to the age and habit of the patient, at an early period of the complaint, besides having recourse to emollient fomentations and laxative clysters.

Where inflammation is supposed already to exist at the neck of the bladder or prostate gland, it will likewise be proper to make use of topical bleeding by applying several leeches to the perinæum.

If the suppression does not give way to these means, the patient should be put into a warm bath, and having kept him in it for about ten minutes or a quarter of an hour, he is then to be taken out, and the introduction of a catheter or hollow bougie to be attempted. Where an oval tub can be procured for the purpose of bathing him, it ought to be preferred, as then the introduction of the catheter may be attempted in the bath, and possibly with a more decisive effect.

In some cases of suppressed urine it not unfrequently happens that none of the catheters in ordinary use can be introduced, though a bougie may be made to enter the bladder. It is not always, however, that, on withdrawing the bougie, the urine flows; in which case no material benefit can be gained. To combine the advantages of both the catheter and bougie, the following mode of proceeding has been advised; nay, we are informed that it has been used with success in several instances.*

The end of a gum elastic catheter is to be cut off, and about two inches of the end of a bougie is to be tied on it. This by its flexibility will bend in the proper direction, which the catheter will not do. The best mode, however, of applying the bougie to the extremity of the catheter is to cut off the extremity of the latter; then taking a piece of bougie plaster, one side of it is to be rolled up until it is large enough to fill the bore of the catheter, into which it is to be inserted about the third of an inch; the remainder of the plaster is then to be rolled partly around the end of the catheter from which the coating has been previously scraped, and tied with a wax thread.

In every instance of the complaint, whether arising from stricture, gravel, inflammation, or spasm, opiates will prove highly serviceable, and ought therefore to be administered not only by the mouth along

* See New-York Medical Repository, 1805.

with diuretics* of a mild or bland nature every three or four hours, but likewise in clysters repeated very frequently.†

Injecting sweet oil, or even warm milk and water, frequently up the urethra, will often afford relief, especially if the suppression has been occasioned by a small piece of gravel which has stuck in the canal.

In both ischuria and dysuria arising from gravel or a stone in the bladder, besides adopting this step, we should have recourse to the means advised expressly under these heads.

Making the patient stand on a cold stone floor, and applying snow or ice to the region of the pubes, have been known to remove a suppression of urine when other remedies have failed.

When all these means prove unsuccessful, tobacco clysters‡ will often be attended with a happy effect; but from the languor, faintness, cold sweats, nausea, and great depression of the living power, which they produce (even to an alarming degree sometimes,) it is difficult to persuade patients to submit to them on any fresh attack of the complaint. The tinctura nicotianæ administered in doses of thirty drops twice or thrice a day in a teacupful of linseed-tea has proved an excellent remedy in many cases of dysuria.

The tinctura ferri muriati is a remedy which often proves efficacious in suppressions of urine arising from spasm, and may be given in doses of ten drops, repeated every ten minutes, until some sensible effect is produced. After six doses the urine usually flows freely. To the good effect of this medicine I can myself bear testimony, having tried it in two cases of spasmodic suppression with success.

In ischuria, particularly where it is of a chronic nature, camphor has been found a very valuable medicine, and may be given as advised below,§ administering a dose of the oleum ricini now and then.

In morbid conditions of the bladder, in which a suppression of urine is apt to arise, and to recur frequently, the extract of hyoscyamus may

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* ℞. Mucilag. Gum. Arab. ℥j.
Ol. Olivæ ℥ij. Terantur simul, et adde
Spirit. Æther. Nitros. ℥j.
Tinct. Opii gutt. xx. M.
ft. Hauſtus.

Vel

℞. Kal. Acetat. ʒſs.
Aq. Raphan.
— Fœnicul. āā ℥vj.
Tinct. Opii gutt. xx.
Syrup. Althææ ʒij. M.
ft. Hauſt. 4ta quaq. hor. ſumendus.

† ℞. Bals. Copaib. ʒij.
Vitel. Ovi q. s. ad. solut. et adde
Decoct. pro Enemat. ℥xij.
Ol. Ricini ℥ſs.
Tinct. Opii gutt. L.—C. M.
ft. Enema.

Vel

℞. Terebinth. Vulg. ʒiij.
Vitel. Ovi ij. vel q. s. ad solut. et adde
Decoct. pro Enemat. ℥xij.
Ol. Olivæ ℥j.
Tinct. Opii gutt. xxx.—L.—C. M.
ft. Enema.

‡ ℞. Nicotianæ Siccæ ℥ij.
Aq. Fervent. ℔j. Col.
ft. Enema.

§ ℞. Camphor. gr. v.
Calomel. gr. ſs.—j.
Opii gr. j.
Conſerv. Aurant. q. s. M.
ft. Bolus bis in die ſumendus.

prove a good medicine, beginning with doses of four or five grains, and so gradually increasing the quantity according to the state of the distress, and the effect produced. When a diseased condition of the bladder is supposed to be connected with, or dependent on scrofula, possibly cicuta may be of some service; but to derive benefit from it in such cases, it should be used in as large doses as possible. Gentle courses of mercury, conjoined with hemlock, have sometimes been beneficial in the like cases; but where, under a morbid condition of the bladder, the inflammation and irritation are great, and verging to a state of scirrhus or ulceration, mercury would certainly be injurious. See Cystitis, and Scirrhus of the Prostate Gland.

In desperate cases, where all the means which have been advised prove ineffectual, and where imminent danger is to be apprehended from the vast distention of the bladder, recourse should be had, before it is too late, to the operation of puncturing it with a trocar.

Those who are subject to the affections here treated of, ought carefully to guard against all exposures to cold, and particularly getting wet in the feet: they should lead a temperate life, avoid all severe exercise, especially on horseback; and they should use every precaution against receiving any venereal taint. Those who are liable to a suppression or difficulty of urine, either from strictures or caruncles in the urethra, will act prudently in wearing a bougie for an hour or two every day.

Of an INTERRUPTION of the MENSTRUAL FLUX, or AMENORRHŒA.

AMENORRHŒA is to be considered as of two kinds; the one where the menses do not begin to flow about the period of life at which they generally appear, and the other where, after having made their appearance, they cease to return at their usual periods from other causes than conception. The term of retention has been applied to the former, and that of suppression to the latter.

Menstruation seems evidently to give a disposition to the female organs of generation to be acted upon by the male semen, so as to fit them for impregnation, as women seldom, if ever, bear children before they have menstruated, and few, or none, ever become pregnant after the total cessation of this discharge. Whether or not the blood which should have passed off by menstruation, contributes to the formation and nutriment of the fœtus in utero, is looked upon as a matter of doubt: that it does not, is the opinion most generally entertained.

In warm climates, menstruation takes place at a much earlier period of life than in cold ones, as in the former it often makes its appearance at the age of ten or eleven years; whereas in the latter it is seldom to be observed before fifteen or sixteen. It also ceases much sooner with women who reside in warm climates, than it does with those who are inhabitants of cold ones; as in the former, menstruation is not often to be observed after the age of forty; whereas in the latter it seldom

stops before that of forty-five, and is in many instances extended to fifty years.

Some women begin to menstruate without any previous indisposition; but with most of them the first appearance of the discharge is preceded by a swelling or enlargement of the breasts, together with a sense of fulness at the lower region of the belly, pains in the back and inferior extremities, and some slight hysteric affections; all of which cease as soon as the flow of blood takes place.

For the two or three first times of its appearing, it is apt to be somewhat irregular, both as to the quantity of blood which is discharged, and the period of its return; but after these, it usually observes stated times, and nearly the same quantity is lost at each visitation, unless some irregularity takes place.

To ascertain the quantum generally discharged, with exactness, is impossible, as this varies in different women, and greatly depends on the constitution. Those of a delicate habit and lax fibre have a more copious and a longer continued discharge than women of a robust constitution. In general, however, the menses continue to flow from four to six days, and the quantity of blood discharged is about five ounces.

Pregnant women, and nurses do not usually menstruate during such processes.

Of a RETENTION of the MENSES, or CHLOROSIS.

THE cause of this disease (known likewise by the name of green sickness) seems to be a want of power in the system, arising from weakness, to propel the blood into the uterine vessels, with a force sufficient to open their extremities, so as to allow of a discharge of blood from them; but the origin of the peculiar weakness which appears at this particular period of life, we are wholly unacquainted with. Some have referred it to a certain state or affection of the ovaria, between which and the uterine vessels there is a seeming connexion.

The supposed connection of chlorosis with defective menstruation as its cause, and with the restraints imposed by the laws of society on certain natural appetites and passions, has been combated by a late writer,* and he thinks that the leading symptoms may be readily explained by a reference to the state of the primæ viæ. Costiveness always precedes and accompanies the other symptoms. This induces, he says, the feculent odour of the breath, disordered stomach, depraved appetite, and impaired digestion, which preclude a sufficient supply of nourishment at a period of growth when it is most wanted.

Heaviness, listlessness to motion, fatigue on the least exercise, palpitations at the heart, pains in the back, loins, and hips, flatulency and acidities in the stomach and bowels, costiveness, retention of the menses,

* See Observations on the Utility of Purgative Medicines in several Diseases, by Dr. James Hamilton of Edinburgh.

a preternatural appetite for chalk, lime, and various other absorbents, together with dyspeptic symptoms, usually attend on this disease.

As it advances in its progress, the face becomes pale, or assumes a yellowish hue; the whole body is emaciated, flaccid, and likewise pale; the feet are affected with œdematous swellings; the breathing is much hurried by any vigorous exertion of the body; the pulse is quick, but small; and the person is apt to be affected with many of the symptoms of hysteria. Sometimes a great quantity of pale urine is discharged in the morning.

To procure a flow of the menses proves, in some cases, a very difficult matter; and where the disease has been of long standing, various morbid affections of the viscera are often brought on, which at length terminate fatally. By marriage, and a change in the mode of life, the disorder has in several instances been removed.

Dissections of those who have died of chlorosis, have usually shewn the ovaria to be in a scirrhous or dropsical state. In some cases the liver, spleen, and mesenteric glands, have likewise been found in a diseased condition.

The cure of the disorder is to be regulated on the plan of increasing the tone of the general system, and of exciting the action of the uterine vessels.

The first of these is to be effected by a generous nutritive diet, with a moderate use of wine; by gentle and daily exercise, but more particularly on horseback; by associating with agreeable company, so as to keep the attention engaged, and the mind tranquil and amused; by inhaling dephlogisticated air or oxygen gas; and by a regular use of tonic medicines, as the infusum gentianæ compositum, infusum quassiæ, &c. together with chalybeates, various forms of which will be found under the head of Dyspepsia.

Previous to a use of these medicines it may, however, be advisable to give a gentle emetic, for the purpose of cleansing the stomach, and freeing it from acidities and inactive fluids.

Chlorosis (a disease which is at all times much relieved by steel, and will bear it, even where there is a considerable degree of feverish irritation) is often entirely removed by a course of Bath water; and its use as a warm bath will greatly contribute to remove that languor of circulation and obstruction of the natural evacuations, which constitute the leading features of this troublesome disorder. Women of an irritable habit should not, however, drink more than a pint a day.

Tunbridge-well water is another chalybeate which frequently proves serviceable to chlorotic women. To those of a weak irritable stomach, the fresh-drawn water is apt to prove too cold, and to occasion a nausea or sickness, which always defeats the general intention of the medicine. This inconvenience is to be prevented by giving the water a tepid warmth, and to do this, it is by far the best method to put it into a bottle closely corked, and to immerse the whole in hot water, for by this means but little of the carbonic acid escapes. During a course of this water as well as of the former, it will be advisable to employ the warm bath occasionally;

the propriety of which practice is proved by daily experience. A bath of about eighty degrees will be highly serviceable; a colder one might do injury.

Pyrmont and Spa waters may likewise be found useful in this disease. As the former of these is very strong, and contains a large excess of carbonic acid, it will bear dilution with boiling water sufficient to bring the whole to a moderate temperature; but with the mild weak chalybeates, such as that of Tunbridge, the method of warming it in the manner before mentioned is by far the best. In using the Spa-water, it will be most advisable to begin with a moderate quantity, not more than half a pint for a dose, which may be repeated three or four times in the day, and be gradually increased till some effect is produced on the secretions. Many patients, but more particularly those on the spot, are in the habit of diluting with this water the wine that forms their common drink, which makes a pleasant and salutary beverage.

The second intention of cure (viz. of exciting the action of the uterine vessels) is to be promoted by the exercises of walking and dancing, by frequent friction, by putting the feet often into warm water, by heat applied to the organs of generation and lower region of the belly, in the form either of steam or stupes, by compression of the iliac arteries, and by electricity, applied so as particularly to affect these parts; the two last of which by being used at the same time, are more likely to be attended with a good effect. In all cases, venery is however the most certain and natural remedy.

Stimulating the rectum by purgatives is a mean which is likewise usually employed in chlorosis, to excite the action of the uterine vessels. Those most in use, are the drastic resins, such as aloes and scammony, which may be given as advised below.* Mercury is sometimes employed as a stimulant in this disease, and the preparation of it most used is calomel; but it is by no means universally approved of as a safe medicine. When given in cases of this nature, it ought to be combined with drastics.†

Some practitioners are in the habit of giving these stimulating purgatives twice a week; but the preferable way seems to be that of employing them in a small but sufficient dose every night, when the patient retires to rest, so as to keep up a regular and sufficient alvine evacuation.

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* ℞. Pilul. ex Aloe cum Myrrh. ʒj.
in Pilulas xij. dividend. quarum sumat iij. vel iv. pro dos.
Vel
℞. Pilul. e Gummi Aloes Socotorin. āā ʒj.
Syr. e Spin. Cerv. q. s. M.
ft. Massa in Pilulas xxiv. distribuenda, quarum capiat iij. vel iv. hora decubitus.
Vel
℞. Tinct. Aloes Comp. ʒfs.—ʒj. pro dos.
Vel
℞. Pulv. e Scammon. cum Aloe ʒij.
Sapon. Venet. ℈j.
Syr. e Spin. C. q. s. M.
fiant Pilul. xxviij. quarum sumat iij. vel iv. pro dos.

† ℞. Pulv. e Scammon. cum Calomelane ʒj.
Syrup. q. s. M.
ft. Massa in Pilul. xij. distribuenda. iij. pro dos. sumendæ.

The author of the observations before quoted tells us, that he has found the purgative plan very successful in chlorosis, but that it requires great assiduity and perseverance frequently to accomplish the end desired. The formation of this and many other diseases, he thinks, may be prevented wholly by promoting at all times, where nature is defective, a regular and sufficient alvine evacuation: which opinion is so well grounded, as to stand in need of no arguments from me to confirm it.

Besides purgatives, other stimulants, under the name of emmenagogues, have been much employed in the cure of chlorosis; but they seem better calculated for a suppression of the menses, than for a retention of them, as in this disease tonics and chalybeates are the most advisable. Should the practitioner, however, be disposed to make trial of them, he will find various forms of the same under the head just mentioned.

If the desired effect is not produced by these remedies, we may, after a fair trial of them, recommend a tea-spoonful of the medicines advised below,* to be taken morning, noon, and evening, giving now and then an emetic of the vitriol. cupri, as prescribed under the head of Phthisis Pulmonalis.

Should the patient, in the course of the disease, be troubled with acidities in the stomach, we ought then to have recourse to absorbents, as directed in Dyspepsia.

The aqua kali præparati, in small doses, frequently repeated, is a good medicine for palliating cardialgic paroxysms in chlorotic constitutions.

Of a SUPPRESSION of the MENSES.

ANY interruption occurring after the menstrual flux has once been established in its regular course, except when occasioned by conception, is always to be considered as a case of suppression.

A constriction of the extremities of the vessels of the uterus, arising from accidental circumstances, such as cold, anxiety of mind, fear, inactivity of body, the frequent use of acids and other sedatives, &c. is the cause which evidently produces a suppression of the menses. In some few cases it appears as a symptom of other diseases, and particularly of general debility in the system.

When the menstrual flux has been suppressed for any considerable length of time, it not unfrequently happens that the blood which should

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* ℞. Tinct. Cinchonæ ℥jfs.
——— Ferri Muriat. ℥j.
——— Cantharid. ℥fs. M.
Vel
℞. Tinct. Aloes C ℥jfs.
——— Helleb. Nigr.
——— Castor. ää ℥ij.
——— Cantharid. ℥j.

Vel
℞. Pulv. Myrrh. ℥fs. Solv. in Aq. Piment. ℥ij. et adde Ferri Vitriolat. gr. xv. Kal. Præparat. gr. x. Tinct. Cantharid. gutt. x. M.
ft. Haustus ter in die sumendus.

have passed off by the uterus, being determined more copiously and forcibly to other parts, gives rise to hemorrhages; hence it is frequently poured out from the nose, stomach, lungs, and other parts, in such cases. Besides being subject to these accidents, the patient is likewise much troubled with costiveness, colic pains, and with dyspeptic and hysteric symptoms.

Our prognostic in this disease is to be directed by the cause which has given rise to it, the length of time it has continued, and the state of the person's health in other respects. When suddenly suppressed in consequence of cold, it may easily be restored by pursuing proper means; but where the suppression has been of long standing, and leucorrhœa attends, we ought always to consider such circumstances as unfavourable.

In those cases which have terminated fatally, in consequence of the long continuance of the disease, the same morbid changes in the ovaria and uterus are to be observed on dissection, as in those of a retention of the menses.

What we are principally to have in view in the treatment of this complaint, is to remove (if possible) the constriction which affects the extremities of the vessels of the uterus; and this is to be attempted by a use of relaxants, antispasmodics, and general stimulants, as advised under the head of Retention, with an exception to tonics and cold bathing, which appear to many of an ambiguous effect. In those cases, however, where the suppression is symptomatic of general debility, they may be used.

As relaxants, bladders filled with warm water may be applied to the region of the pubes and adjacent parts, or warm vapours may be received on them, by making the patient sit on a chamber-pan filled with hot water; and in order that these applications may have the due effect, they should be employed particularly at the time when nature seems to be making some effort to produce the discharge, which may be known by a sense of fulness in the organs of generation, a weight in the back and loins, and slight spasmodic pains in the uterus.

To increase the relaxing powers of these topical applications, we may at the same time give an opiate.

Such are the means we should pursue when the efforts of the system are concurring; but at other times, or during the intervals, we ought to have recourse to medicines, which acting either by peculiarly removing spasm, or by increasing the general action of the system, have been denominated emmenagogues. Those most in use are castor, myrrh, black hellebore, savine, wood soot, madder, and calomel, together with emetics, and various cathartics of a stimulating nature, as noticed under the head of Retention.

In employing emmenagogues, the practitioner must be careful to discriminate those cases of suppression which are the consequence of a lax habit, and which, although not very frequent, now and then occur, from those which proceed from a constriction of the extremities of the vessels of the uterus; as, in the former, a liberal use of forcing medi-

cines would be likely to prove injurious, and which can only be relieved by chalybeates, and other tonics.

Where it is proper to employ emmenagogues, they may be administered in any of the forms * here recommended.

Persons subject to, or labouring under a suppression of the menses, should carefully avoid all exposures to wet and cold, particularly in the feet, which parts ought to be kept not only dry, but warm.

Of DIFFICULT MENSTRUATION, or DYSMENORRHŒA.

BESIDES the two deviations from the usual course of nature already mentioned, there sometimes occurs a third, viz. where menstruation, although not wholly suppressed, is nevertheless somewhat difficult, and accompanied with severe pains in the back, loins, and bottom of the belly.

This disease is supposed to be owing to a weak action of the vessels of the uterus, or spasm of its extreme vessels, and is to be obviated by chalybeates, warm bathing, both topical and general, together with the use of opiates, which should be employed as soon as the symptoms that denote its approach are apparent.

Of a CESSATION of the MENSES.

THE period of life at which menstruation ceases is always a very critical one to women, as the constitution then undergoes a very considerable

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* ℞. Tinct. Sabin. Compos. ℥j.
—— Helleb. Nigr. ℥ſs.
—— Caſtor. ℥ij. M.
Guttæ xxx.—xl. ter die ſumendæ in quovis vehiculo.

Vel

℞. Tinct. Helleb. Nig. ℥ſs.
—— Myrrh. ℥j.
—— Cantharid. ℥ij. M.
Sumat ægra guttas xxx. ter quaterve die.

Vel

℞. Tinct. Aloes. Comp.
—— Martis āā ℥ſs.
—— Caſtor. ℥ij M.
Cochl. minim. j. ter die ſumendum.

Vel

℞. Tinct. Fuliginis
—— Caſtor. āā ℥ſs. M.
Capiat Cochl. min. j. ter in die.

Vel

℞. Pulv. Rad. Rub. Tinct. ʒſs.
Aq. Menth. Sativ. ℥jſs.
Tinct. Cinnam. C. ℥ij. M.
ft. Hauſtus ter quaterve die ſumendus.

Vel

℞. Pulv. e Myrrha Compos. ℈j.
Ferri Ammoniacal. gr. v.
Conſerv. Cort. Aurant. q. s. M.
ft. Bolus bis in die capiendus.

Vel

℞. Pilul. e Gumm.
Ferri Vitriolat. āā ʒj.
Extract. Sabin.
—— Helleb. Nigr. āā ℈j.
Syrup. Zingib. q. s. M.
ft. Maſſa in Pilulas xxxvj. diſtribuenda, quarum ſumat iij. mane et veſpere.

Vel

℞. Ferri Rubigin.
Pulv. e Myrrh. C. āā ʒj.
Aloes Socotorin. ℈ij.
Sapon. Venet. ℈ſs.
Syrup. q. s. M.
Fiant Pilul. xxxvj. Capiat iij. bis terve in die.

change, and it not unfrequently happens, that chronic complaints then arise, which create much disturbance, and, after a time, terminate fatally.

The menses seldom cease all at once, but for some time before their stoppage become somewhat irregular, both as to the periods and the quantity.

When they happen to disappear suddenly in women of a full plethoric habit, such persons should be careful to confine themselves to a more spare diet than usual; they should likewise take regular exercise, and keep their body open by a use of some mild laxative, such as the electuarium e senna, the purgative quality of which may be increased, if not found sufficiently powerful, by adding a small quantity of jalap.

Where the patient is sensible of a seeming fulness of the vessels, with giddiness and occasional pains in the head, small bleedings may likewise be advisable.

If ulcers break out in the legs, or any other part of the body, on a total cessation of the menses, they ought to be regarded as critical discharges, and should by no means be healed up without substituting some other drain by an issue.

Should any scirrhous or cancerous affection of the uterus take place on a stoppage of the menstrual flux, as sometimes happens, all that can be done in such a case is to have recourse to palliatives, such as opium, hyoscyamus, and hemlock, which may be combined.

ORDER VI.

TUMORES.

INCREASED bulk of a part with little or no inflammation.

Of a SCIRRHUS and CANCER.

A CANCER is an ulcer of the very worst kind, with an uneven surface, and ragged and painful edges, which spreads in a very rapid manner, discharges a thin acrimonious matter that excoriates the neighbouring integuments, and has a very fetid smell, and which is usually preceded by a hard or scirrhous swelling of the part, if glandular.

The disease is most commonly confined to glands, and particularly the testes and mammæ; but is nevertheless now and then to be met with in the face, and other parts that are thinly covered with flesh, and which are at the same time a good deal exposed to external irritation. From a lodgment of soot in the rugæ of the scrotum, chimney-sweepers who have arrived at the age of puberty are very subject to a peculiar cancerous affection in this part, and first noticed by the late Mr. Pott.*

A cancer arises most frequently from some external injury, such as a blow; but is now and then to be met with as the consequence of previous inflammation excited by other causes. From several persons of

* See his Chirurgical Works, p. 734.

one family having been known to be afflicted with cancer, it seems as if there had been in these cases an hereditary predisposition to the disease.

A late ingenious writer† has offered it as his opinion that cancer is produced by hydatids. That these may be formed on a cancerous gland cannot be disputed; but that they are generally to be met with, or are in any respect essential to the disease, cannot be admitted.

It usually begins with a small swelling in the gland, unaccompanied either by pain or any discolouration. This gradually increases both in hardness and size, is at length attended with lancinating pains, and varicose swellings of the veins, and with an uneasiness and painful sensation in the neighbouring parts. It sometimes remains in this occult or scirrhous state for a considerable length of time; but in other cases, it proceeds on to suppuration with great rapidity, and so forms the ulcer. Its progress will however depend much on the state of the patient's constitution, and whether the disease has arisen from an hereditary predisposition or from some external injury.

When the tumour ulcerates, and thereby affords an opportunity for an absorption of the matter into the system, we have every reason to suppose that a cure can seldom, if ever, be effected; for although we may remove the diseased part, still the virus will be likely, sooner or later, to shew itself in some other glandular place. Extirpation, under such circumstances, will, therefore, in all probability, be attended with no lasting advantage.

During the occult or scirrhous state of the tumour, it will be advisable to have recourse to frequent topical bleedings by means of leeches, together with saturnine applications, gentle laxatives so as to keep an open belly, and a milk and vegetable diet. If these means fail, we may make trial of a weak mercurial liniment to the part, together with a decoction of the woods combined with some antimonial preparation, as already advised under the head Inflammation terminating in Scirrhus. See page 81.

In the early stage of the disease, a slight course of mercury, either by means of unction, as mentioned under the same head, or of small doses of calomel or muriated quicksilver joined with antimonials, and assisted by vegetable substances which possess a diaphoretic nature, such as guaiacum, sassafras, china-root, sarsaparilla, and mezereon, has in some cases been attended with a very happy effect.

Hemlock is a medicine which, since the days of Stork, has been much employed in cancer, and often, we have reason to suppose, with some advantage. To derive this with the greater certainty, however, we should make use of it before the state of ulceration commences. In administering any of the preparations of hemlock, we should always begin with a small dose, and so augment it gradually, till the patient experiences some inconvenient effects in the head and stomach; at which period it is, that the advantages, if any can be produced, will begin to be manifest. The extract is its most active preparation, and this may be employed in pills of two grains each, from one to twelve, in the twenty-four hours. Drink-

† Dr. Adams's Obfervations on morbid Poifons.

ing about a pint or quart a day of the decoctum sarsaparillæ compositum, or the Lisbon diet-drink,* might probably increase its powers. In this last, the powdered antimony and pumice-stone are to be tied in separate pieces of rag, and boiled along with the other ingredients.

Belladona and hyoscyamus are medicines of the same class with hemlock, the timely use of which has sometimes proved advantageous in glandular tumours and indurations that are likely to become cancerous.

Where no advantage seems to be derived from any of the means which have been advised, but, on the contrary, the tumour is proceeding hastily on to suppuration and ulceration, the only effectual remedy then left is its complete extirpation; and this we should not fail to enforce most strenuously to the patient, provided it is moveable and not attached to bony parts, and its local situation does not render the operation improper.

As the female breasts are however liable to enlargements and indurations from external injuries, exposures to cold during a puerperal state, and such other causes as by inattention might possibly be mistaken for a scirrhus, it will certainly be very necessary in all doubtful cases to scrutinize minutely into the rise of the tumour, the symptoms and appearances with which it is attended, and the progress that it has made, in order that we may ascertain the real existence of the disease in question, previous to our having recourse to the operation.

Where this has been neglected, and the inflammation has proceeded on to suppuration and ulceration, we are then to endeavour to correct the fœtor and acrimony of the discharge; to defend the adjacent parts from its effects; and to quiet the pain and lessen the irritability of the sore.

The first of these intentions is to be answered by washing the ulcer with the dephlogisticated muriatic acid diluted with three times its weight, or more, according to the irritability of the sore, and the smarting it occasions, as recommended by Dr. Crawford; and then applying a carrot poultice, or one composed of an infusion of malt, oatmeal, and yeast, as directed under the head of Gangrene. The cataplasma carbonis (which is composed of about half a pound of the common bread poultice, with two ounces of wood charcoal in very fine powder) is another application which has likewise been found highly useful in sweetening fetid ulcers, and obtunding the acrimony, and may perhaps be preferable to the fermenting cataplasm, as this, by lying on the part some hours, becomes more offensive than the smell it was intended to correct.

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* ℞. Sarsaparillæ Concis.
Rad. Chinæ āā ℥fs.
Nucum Juglandis cortice siccatarum No. x.
Antimonii ℥j.
Lapid. Pumic. Pulv. ℥fs.
Aq. Distillat. ℔v.
Coque ad dimidium et Col.

The charcoal should be taken fresh from the fire, and powdered very fine as soon as cool; when it is immediately to be put into a bottle and corked, in order that it may not be exposed to the air.

The application of carbonic acid gas, or air in its elastic state, has been much used in the ulcerated stage of the disease, and often with a seeming happy effect, as we are informed by Dr. Ewart of Bath,* who employed it agreeably to the following process.

The neck of a bladder was cut off, so as to make a circular aperture into it, of such dimensions as to correspond nearly with the size of the ulcer of the breast. A round hole of the same size was cut in a piece of soft leather, spread with adhesive plaster, and large enough to surround the ulcer; the cut end of the bladder was introduced through the hole in the leather, and its edges folded back, and stuck to the plaster on the opposite side, forming somewhat of the shape of a round hat, the plaster resembling the rim, and the bladder, when distended, the crown. In order more effectually to cement the adhesion of the bladder to the plaster, and to make it air-tight, narrow circular strips of plaster were applied round their junction both inside and without. The large plaster was then fixed on the mamma, the aperture in its centre, with the bladder fitted to it, being placed exactly over the ulcer, no part of which was touched by the plaster. A small orifice was made at the fundus of the bladder, sufficient to admit a tube of about a quarter of an inch diameter, which communicated with the top of an inverted cylinder, suspended upon water, which cylinder was filled with carbonic acid gas. The bladder being closely squeezed, to expel from it the atmospheric air it contained, and the above-mentioned tube being inserted into the orifice formed to receive it, and tied by a ligature passed over the bladder, the inverted cylinder was pressed down in the water, so that the carbonic acid air was made to rush through the tube, and distend the bladder; the tube being then withdrawn, the orifice of the fundus of the bladder was tied, to prevent the escape of the carbonic acid air, which was thereby kept in contact with the ulcer. As often as the bladder collapsed, so as to shew that much of this air had got out, it was filled in the same manner as before; and this operation was repeated sometimes twice, sometimes three times a day, according as it appeared necessary. A proof of this simple apparatus fully answering its purpose, was, that the bladder, when filled at night, was for the most part found to contain a considerable quantity of its air the following morning.

The second indication, of defending the adjacent parts from being acted upon by the acrimony of the discharge, is to be effected by dressing or covering them with mild cerates, composed of lapis calaminaris or cerussa acetata: and

The third indication, of quieting the pain, and lessening the irritability

* See his History of two Cases of ulcerated Cancer of the Mamma, one of which has been cured, the other much relieved, by a new method of applying carbonic acid Gas.

of the sore, is to be answered by fomenting it with a decoction of poppies, and then applying a cataplasm of cicuta, as likewise by an internal use of opium at the same time.

If the part affected will admit of it, the tumour should be suspended so as to keep it as easy as possible night and day. It should be kept neither too warm nor too cold, as both extremes would be injurious.

Henbane, nightshade, and others of the narcotic class, have also been employed in external applications as well as cicuta. When used in this way, the leaves may be boiled in milk, so as to form a decoction, sufficiently strong, and with this the part must be frequently fomented. The gastric liquor of graminivorous animals applied to putrid and cancerous ulcers, has sometimes been attended with benefit.

Besides applications of the narcotic kind, many of a caustic nature have been much used in the ulcerated stage of cancer, and they have been employed under a variety of forms; but their principal ingredients are well known to be either arsenic or muriated mercury. The most noted are the Arundel powder, Guy's powder, and Plunket's powder,* the last of which is a composition of crow's-foot, dog's-fennel, and arsenic. It is prepared and applied as follows: The crow's-foot and dog's-fennel being fresh gathered and bruised, the other ingredients are to be added, and the whole beaten into a paste. This is to be formed into balls, and dried in the sun. When used, they are to be powdered, mixed with the yolk of an egg, and applied, on a piece of pig's bladder, to the surface of the cancer. In this state the caustic is to remain, till the eschar separates spontaneously. When this remedy is used in cancers of the nose or lips, the greatest circumspection will be necessary, lest a portion of the arsenic should be swallowed.

A caustic composed of one ounce of powdered antimony and half an ounce of powdered arsenic, fluxed together in a crucible, and afterwards reduced to powder, was very extensively used by the late Mr. Justamond in his treatment of cancers, and often with a most happy effect. By an addition of powdered opium, this remedy may be reduced to any degree of mildness. Equal parts of white arsenic and sulphur form a caustic application that is very powerful.

A good method of using arsenic is by mixing about two or three grains of it with a drachm of lapis calaminaris, and strewing a little of the powder on the cancer every day till the whole is destroyed and sloughs off.

Arsenic seems to possess in cancer, powers which are peculiar and distinct from those of other caustics. If applied to the skin it will not affect it; but if this is abraded, it will produce an eschar to a certain degree, but it will be superficial. When continued for any length of

* ℞. Ranunculi Acris Fol.
Flammulæ Vulg. Fol. āā ℥j.
Arsenic. Alb. Lævigat. ℥j.
Flor. Sulphuris ℈v. M.

time, the eschar will not be increased, yet the parts beneath the eschar will be found sloughed to a degree and extent proportionable to the strength in which the mineral has been applied: in short, to accomplish this end in the application of arsenic, it is not necessary that it should be in contact with the whole of the part it is intended to destroy.

Arsenic, besides being applied externally in cancers, has likewise been administered internally, and sometimes with a seeming good effect. Where the practitioner is desirous of making a trial of it, he can give the solution of Dr. Fowler of York, as mentioned under the head of Intermittent Fever. A poultice made with crumb of bread, and moistened with some of this solution, diluted to the proportion of one grain of arsenic to a quart, might probably prove a very good external application, as well as the former, which have been noticed.

Arsenic and cicuta having been found to possess greater virtues in this disease than any other remedies yet tried, it has been proposed as a query* whether we might not expect some good effects from giving them both at the same time?

A saturated solution of muriated barytes in doses of from three or four, to ten or twelve drops twice a day, in any convenient vehicle, has been recommended by Dr. Crawford in cancerous and scrofulous affections. In the early stage of cancer, it seems to have been frequently used with some advantage, but never in its last stage.

In cancerous ulcers of the face the expressed juice of the carduus tomentosus Linn. (the woody-headed thistle or friar's crown) has been employed with much advantage by the continental physicians, and particularly by Dr. Handel. He ordered his patients to anoint the parts affected with the fresh juice six or eight times every day, and he found that in the course of a fortnight it checked the progress of the most malignant cancer of the face, but it produced no relief whatever where the female breast was affected with that loathsome disease.

In the cancer scroti, to which chimney-sweepers are peculiarly subject, extirpation bids fair for effecting a complete cure, if done before the virus has seized the testicle, and the habit is tainted. A case of this nature some time ago came under my care, in which the diseased part was removed by ligatures; the patient having been, some months before his application to me, discharged from the Winchester hospital, for refusing to submit to an extirpation of the part with a knife, to which, undoubtedly, a decided preference was due. The cure however proved as complete a one as ever I witnessed, although the case was somewhat deplorable, the patient being far advanced in life, and much emaciated by disease, pain, and poverty.

In every species of open cancer, the air should be excluded as much as possible; a covering of double oiled silk may therefore be applied over the dressings.

* See Dr. Temple's Practice of Physic, p. 312.

Of BRONCHOCELE.

THIS disease is marked by a tumour on the fore part of the neck, and seated between the trachea and skin. In general, it has been supposed principally to occupy the thyroid gland.

We are given to understand that it is a very common disorder in Derbyshire, but its occurrence is by no means frequent in other parts of Great Britain, or in Ireland. Among the inhabitants of the Alps, and other mountainous countries bordering thereon, it is a disease which is very often met with, and is there known by the name of Goitre. The cause which gives rise to it, is by no means certain, but it has generally been attributed to a use of snow water.

From its having been observed that the inhabitants of districts abounding with saline and mineral springs are more frequently affected with diseases of this sort than persons living in other situations, it has been supposed, that the waters descending from these mountains with which the dissolved snow mixes itself, may also be impregnated with some saline or mineral ingredients capable of producing this singular affection in the throat.

Dr. Saunders observes,* that snow water has long lain under the imputation of occasioning those strumous swellings in the neck, which deform the inhabitants of many of the Alpine vallies; but that this opinion is not supported by any well-authenticated indisputable facts, and is rendered still more improbable, if not entirely overturned, by the frequency of the disease in Sumatra, where ice and snow are never seen; and its being quite unknown at Chili and in Thibet, though the rivers in these countries are chiefly supplied by the melting of the snow with which the mountains are always covered. Certain experiments have moreover proved that the water of dissolved snow is, perhaps, the purest of any which can be procured.

The disease in question is evidently of too local a nature to be attributed solely to an habitual use of snow water, nor can it be brought on by using water impregnated with calcareous earth, as some have imagined; for the same effects are not uniformly produced where such water is used. A predisposition to bronchocele is, I think, often entailed by parents upon their children, as well as that glandular affection known by the name of scrofula; which fact is corroborated by the strongest evidence, as I know a family consisting of seven, all of whom were attacked with it before they arrived at the age of puberty; the father having been afflicted with it at an early period in life. This family resided at Crondall in Hampshire, and were the only persons in the place who laboured under it. The predisposition to the disease must, therefore, have been entailed on the children by the parent. Where we meet with the disease in particular districts, may we not therefore with good reason attribute its frequency of occurrence rather to the inhabitants intermarrying among each other, and thereby en-

* See his Treatise on Mineral Waters.

tailing the predisposition to it, than to any peculiarity in the articles used for diet?

In those situations in the vicinity of mountains, where the disease is found to be endemial, it has been attributed by some to a peculiarity in the air, and it has indeed been found more generally prevalent among the lower class of people, and those who are most exposed to the unguarded influence of the weather, and various changes that take place in the air of such situations. See Cretinism.

The swelling in bronchocele is at first without pain, or any evident fluctuation, and the skin retains its natural appearance; but as the tumour increases in size, it grows hard and irregular, the skin acquires a yellow colour, and the veins of the neck become varicose; the face is subject to flushings, and the patient complains of frequent head-achs, and likewise of pains darting through the body of the tumour.

When the disease is of long standing, and the swelling considerable, we shall find it, in general, a very difficult matter to effect a cure by medicine or any external application; and it might be unsafe to attempt its removal with the knife, on account of the enlarged state of its arteries, and its vicinity to the carotids; but in an early stage of the disease we may often be able by the aid of medicine to effect a cure.

Bronchocele has by some practitioners been supposed to be a dropsical affection of the thyroid gland; and it is true that a great number of capsules filled with water have in one or two instances been found in it on dissection, but in general no such appearances are to be observed. In two cases examined by Mr. Benjamin Bell, this gland was evidently much diminished in size from the compression of the tumour, which was chiefly composed of condensed cellular substance, with effusions of a viscid brown matter in different parts of it. To me the tumour appears to be steatomatous.

Although some relief has been obtained at times, and the disease probably somewhat retarded by external applications, such as blisters, discutient embrocations, and saponaceous and mercurial plasters; still a complete cure has seldom been effected without an internal use of medicine, and that which has always proved the most efficacious is burnt sponge. The form under which this is most usually exhibited is that of a lozenge. Many persons labouring under bronchocele have been cured by this remedy, some of whom began to suffer much, and to be seriously alarmed on account of the difficulty of deglutition and respiration, with which their complaints were attended; but whether it cures in a shorter space of time by being administered in the form of a lozenge, so as to allow of its gradual solution, in preference to being swallowed at once, is a point not yet fully ascertained.

Dr. Cheston, of Gloucester, has found burnt sponge to succeed in various cases when employed agreeably to the annexed formula,* and

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*℞. Spongiæ Uſtæ ʒiſs.
Mucilag. Arabic. Gummi q. s.
Fiant Trochiſcus.

subject to the following regulations, which appear to be an improvement on the methods recommended in the Coventry receipt under the sanction of Dr. Bates.*

When the tumour appears about the age of puberty, and before its structure has been too morbidly deranged, a pill, consisting of a grain or two of calomel, must be given for three successive nights, and on the fourth morning a saline purge. Every night afterwards for three weeks, one of the troches should, when the patient is in bed, be put under the tongue, suffered to dissolve gradually, and the solution be swallowed. The disgust at first arising from this remedy soon wears off. The pills and purge are to be repeated at the end of three weeks, and the troches had recourse to as before; and this plan is to be pursued till the tumour is entirely dispersed.

It appears to me, that we should stand a better chance of effecting both a speedier and more certain cure by administering the remedy more frequently than is here recommended by Dr. Cheston, and likewise in more considerable doses than are contained in the Coventry receipt ;† for instances have occurred, where one lozenge was taken even twice a day for a length of time to no purpose; but when the number was increased to three, a good effect was soon evident.

The formula inserted below,‡ is the preparation of calcined sponge, which I have been in the habit of employing, and generally with the desired success. Care must be taken that no more syrup be used than is absolutely necessary to make the dry ingredients cohere: for which reason, it must be added slowly, and the mass must be well beaten. The lozenges are to be dried before the fire on a plate that has been slightly oiled, to prevent them from sticking, and must be kept in some vessel tied over with bladder. One of them is to be placed under the tongue morning and night, so as to admit of its gradual solution; and if after a short time no apparent benefit seems to be derived, the same may be repeated thrice, or even four times a day.

Sulphurated potash dissolved in water (in the proportion of thirty grains to a quart daily) is a remedy which has been employed by Dr. Richter with success in some cases where calcined sponge failed. Occurrences of this nature will rarely happen, however, if the disease is counteracted in time.

We are informed by the Rev. Joseph Townsend, in his Guide to Health, that the disease is very frequent in the vale of Pewsey, and that during thirty years he never failed to cure it in all who applied to him for advice. He mentions, that he formerly gave lozenges of burnt cork, burnt sponge, and pumice-stone, in equal parts, similar to Dr.

* See the Pharmacopœia Chirurgica, p. 139.

† The quantity of calcined sponge in each bolus is only ten grains.

‡ ℞. Spongiæ Uſt. ʒvj.
Pulv. Gum. Arabic. ʒj.
—— Zingib. ʒſs.
Syrup. Simpl. q. s.
In Trochiſc. No. xij. diſtribuend.

Bates's Coventry remedy, and always found this sufficient without any other medicine or application; but latterly, considering, that it is the alkali of these lozenges which combines with the fat collected on the thyroid gland, and making a soap, he has confined himself wholly to burnt sponge, which abounds with soda.

Whether burnt sponge administered in the form of lozenge, or swallowed at once, acts locally, and if it acts locally, whether it is conveyed to the thyroid gland by means of absorbents not hitherto discovered; or whether the thyroid gland is a mucous gland, and is stimulated to excretion by the action of this medicine on the neighbouring parts, has not been ascertained. Such theories have however been suggested.

From the remedy in question having been so frequently employed in scrofulous cases with advantage, I am induced to suppose that its effects are by no means of a local nature.

It has been observed, under the head of the last-mentioned disorder, that the natron præparatum being the basis of burnt sponge, is now frequently employed instead of it, and it is indeed a more active medicine. In bronchocele it may likewise be substituted instead of calcined sponge, and may be made up into lozenges in the same proportion and manner as has been advised with the latter.

In this complaint, galvanism and electricity may possibly prove beneficial, if employed as auxiliaries.

A case is recorded in the 13th volume of the Medical and Physical Journal, p. 13, which resisted a long-continued course of burnt sponge, and was at last removed by a slight mercurial course of calomel. Under a failure of the means which have been mentioned, it may therefore be right to make a trial of the latter, directing a small quantity of the unguent. hydrargyr. fortius likewise to be rubbed in over the diseased part every night.

Of the GUINEA-WORM, or DRACUNCULUS.

THIS disease consists in a small round worm, very much resembling the string of a violin, and of a white colour all over, except the head, which is black, that is discovered in different parts of the body, immediately between the muscles and cellular membrane. The arms, legs, and thighs are however the most general seats of it, in which parts it is often found, of the length of one or two feet.

It is a disease chiefly to be met with among negroes that are brought from the coast of Africa, or sailors who are lately returned from thence, and has generally been supposed to arise from drinking or bathing in the waters of stagnant ponds, where the animalcules of the worm are deposited. This opinion seems however to be ill-founded.

Mr. M'Gregor reports, in his Medical Sketches, that this malady prevailed very much on the voyage from India to Egypt, both among the troops and seamen; and it was only by separating the sick from the sound, and by a very strict attention to cleanliness, ventilation, and fumi-

gation, that he was able to arrest its progress. He by no means, however, attributes its appearance to the water which was drunk, as this came from different quarters, Bombay, Ceylon, and Madras; for the officers of the 88th regiment, as well as the artillery, drank the same water, he mentions, and yet escaped.

Intestinal worms may possibly be induced by a use of certain waters or mucilaginous vegetables; but that those in question can arise from such a cause, cannot be admitted. In my opinion, they are occasioned, like the chigre, in tropical climates, by a small insect of some peculiar nature (see Chigre,) which insinuates itself into different parts of the body, and having formed a nidus, in due time alters its state. Filth, and a neglect of proper cleanliness, may engender these insects at first; and a number of people being exposed to them may become diseased, so as to induce us to suppose that the complaint is of an infectious nature. From having observed it to spread through a gang of negroes, when the precaution of separating the sick from the sound was neglected, I formerly thought the disease might be contagious, but upon more mature reflection I have been induced to alter my opinion.

The patient is usually sensible of an itching in the part or parts at first, and on a narrow inspection, a small bladder or blister may often be observed. The Guinea-worm does not produce, however, any acute pain, until it is near a state of maturity, at which period the part in which it is lodged becomes swelled, inflamed, and very painful to the touch, and bears a strong resemblance to a boil, which is not much disposed to suppurate. The tumour, after having remained in an indolent state for a considerable length of time, breaks at last, and then the head of the worm may be perceived protruded from the orifice, which continuing to push a little forward every day, may at last be laid hold of with ease.

No injurious consequences attend on the disease when properly treated, although, when the inflammation is very considerable, there is often much fever present; but by breaking the worm, from being in too great a hurry to extract it, large abscesses and ill conditioned ulcers are sometimes formed. In a few instances, mortification has ensued, and very large sloughs have been cast off; alarming hemorrhages have also occurred. Frequently after extracting one worm from a patient, a second, or third, or even a fourth will appear: and after getting one out of the leg, another may be observed in one or both hands, or in the other leg.

While the tumour remains in a hard indolent state, it will be necessary to keep an emollient poultice constantly applied to it, in order to bring it to a speedy and proper suppuration. When it breaks, and the head of the worm protrudes so far as that it can be laid hold of with ease, a piece of cotton rolled up like a quill, is then to be tied to it, and as it advances, it is to be daily twisted gently round, until the whole is extracted, using at the same time the greatest precaution that it may not be broken. The wound is then to be covered with dry lint, over which is to be laid a pledget of tow, spread with the unguentum resinæ flavæ.

We are informed by Mr. M'Gregor that the native practitioners are much more successful in getting out the worms than Europeans. After

long feeling with their fingers for the body of the worm, they make an incision as nearly as they can judge over its middle, and pulling the worm by a duplicature of it, draw out both ends at one time.

In the treatment of the Guinea-worm, mercurial ointment has been rubbed on the parts affected by some surgeons, and electrical shocks have been passed through the tumours, but without any good effect. An internal use of medicine is necessary only where the inflammatory symptoms run high, and then cooling purgatives with the rest of the antiphlogistic plan must be resorted to.

As the malady has been mentioned to spread rapidly from a neglect of cleanliness, the greatest attention should be paid to ventilation, and frequent washings and fumigations, in all situations where it makes its appearance. Those who may be unavoidably exposed to its influence, should bathe often in the sea or some river.

ORDER VII.

DOLOROSI. PAINFUL AFFECTIONS.

Of the HEAD-ACH, or CEPHALALGIA.

THIS affection is, in some instances, general over the whole of the head; at other times it is confined to a particular side; and now and then cases occur, where the pain occupies so small a part, that it may readily be covered with the end of the finger, which has been called Clavis Hystericus.

The causes which give rise to the head-ach are most usually indigestion, foulness of the stomach, the hinderance of a free circulation of blood through the head, long exposures to the sun, translations of gouty and rheumatic matter from other parts of the body, the stoppage of some long-accustomed evacuation, inebriety, and lastly, too great a determination of blood to the head. Head-ach is, however, more frequently a symptomatic affection than a primary one, and often arises in consequence of a fever, or of hypochondriasis, hysteria, or some other nervous disease.

The symptoms which attend on a pain in the head, usually vary according to the cause which has produced the complaint.

Where a head-ach is symptomatic of some other disease, it will readily cease on a removal thereof, as in the case of fever. Where the pain comes on suddenly, is acute, and attended with a noise in the ears, giddiness, and a loss of speech, it denotes an attack of apoplexy or palsy. When it arises in hypochondriacal or hysterical persons, is very acute, and accompanied with much throbbing of the temporal arteries, it is apt to terminate in madness. A head-ach proceeding from some fixed nervous affection, is difficult to be removed entirely, and the patient is liable to frequent returns of it.

Between the head and stomach there is a great sympathy; wherefore it happens, that where there is a foulness in the stomach, the head is frequently affected with pain. Where such a cause is apprehended to exist, it will by all means be advisable to give a gentle emetic; and if any costiveness prevails, this should be removed by some proper laxative.

Where the disease proceeds from an over-fulness of the vessels, or from too great a determination of blood to the head, a proper quantity may be drawn off by opening the jugular vein on the side most affected, or by the application of leeches to the temples; the patient afterwards taking care to use a spare regimen, to keep his body perfectly open, and to wear nothing tight about his neck. Those who are of a full plethoric habit of body, and who are troubled with severe and frequent attacks of the head-ach, will act prudently in having recourse to scapulary issues. To alleviate the pain at the time, linen cloths wetted in vinegar and water, or in camphorated spirits, may be applied to the forehead and temples.

When a head-ach arises from a translation of gout or rheumatism from some other part, it will be advisable to excite a slight inflammation in the extremities, by the application of small blisters, and at the same time to open the body by administering some stomachic purgative, as the tinctura rhabarbari composita.

If a venereal taint is the cause of the head-ach, recourse must be had to mercury, as advised in syphilis.

In the head-ach which arises as a consequence of some nervous affection, the most proper medicines will be valerian, castor, asafœtida, and æther, together with bark and steel, which may be administered as recommended in hypochondriasis, hysteria, and dyspepsia. Rubbing the temples from time to time with a little æther may also have a good effect.

The habit is to be rendered at the same time more robust by gentle regular exercise in the open air; by a diet consisting chiefly of animal food with a moderate quantity of wine, and by great regularity as to the hours of rest and rising, and likewise of meals.

Where a head-ach is attended with great pain, long want of rest, and a slight delirium, we may venture to give opiates in a considerable dose, provided proper evacuations have been premised.

Should we have reason to suppose that the head-ach has proceeded from a stagnation of serum in the vessels, or on the membranes of the head, perpetual blisters, issues, and mercurial purges will then be necessary; and along with these we may employ errhines, such as the pulvis asari compositus.

In periodical head-achs, we are informed by Dr. Fowler of York, that he experienced the most happy effects from giving the solution of arsenic, as mentioned in the treatment of intermittent fevers. The best way in such cases will be, to begin with about three drops repeated twice a day, and so to increase the number gradually to eight or ten.

Of the TOOTH-ACH, or ODONTALGIA.

THE tooth-ach consists in an acute pain in one or more of the teeth; but most generally it originates in one, and from that is diffused to the adjacent parts.

A caries of the tooth itself, acted upon by different irritating causes, such as the application of cold, or some acrid matter, is the most usual cause of this complaint; but in some cases it would seem to proceed from a rheumatic affection of the muscles and membranes of the jaw; and here the whole side of the face will be affected. When it takes place in pregnancy, it is to be considered as arising either from an increased irritability or from sympathy.

It may be presumed, that the acrid matter which occasions the tooth-ach, is produced by some vice that originates in the tooth itself. In some instances the caries appears first upon the external surface or enamel of the tooth, in one or more spots which are superficial; but in others it commences in the internal surface, or bony part: the former is, however, by far the most frequent. The caries, by spreading and corroding deeper, at length penetrates the substance of the tooth; and the external air, and other matters, getting into the cavity, stimulate the nerve, and thereby excite the tooth-ach.

The most effectual cure for this disease is extraction of the carious tooth; but as this in some cases may not be advisable, and in others might be strongly objected to by the patient, it will often be necessary to substitute palliative means.

To relieve the urgency of pain, in those cases where there is an opening made into the substance of the tooth by the caries, it is usual to introduce either cotton impregnated with substances of a caustic nature, such as the essential oil of cloves, cajeput, nutmeg, &c. together with sulphuric or other mineral acids, or a small pill composed of opium and camphor. In some instances, the actual cautery has been employed to destroy the sensibility of the nerve.

To prevent a return of the pain when it has ceased, the hole in the tooth should be widened within by a proper instrument, and then be stopped with leaf gold, or leaf lead, by which operation it may often be preserved for many years without any further inconvenience to the person.

These are the remedies and means to be made use of when the disease is confined to a single tooth; but when the neighbouring parts become likewise affected, or there is no access for such an application to the nerve, in consequence of the tooth having no cavity in it, other measures are to be adopted.

Exciting an irritation in the neighbouring parts, by means of blisters applied behind the ears, or by rubbing the jaws with some kind of rube-

facient liniment,* and afterwards keeping them warm with flannel, has often afforded much relief, in cases where the pain is somewhat diffused.

Promoting an increased excretion from the salivary glands, by means of pungent masticatories, such as horse-radish, scurvy-grass, ginger, and pellitory-root, has likewise been adopted in similar cases with much advantage.

In those rheumatic affections of the maxillæ, to which many persons are subject under certain states of the atmosphere, and in which the pain is not confined to any one tooth, but occupies the whole jaw, the pyrethrum has often been peculiarly useful. When the tenderness or tumour of the gums renders the mastication of the root impracticable, a piece of lint, moistened in the tincture, prepared as below,† may then be applied to the most painful part, renewing it as the occasion may require; or the pill here ‡ advised, may be held in the mouth until dissolved.

Washing the teeth every morning with a soft brush or piece of sponge, dipped in clear water; frequently removing the tartar from off them; and making use of some absorbent testaceous powder,§ reduced to a very fine consistence, twice or thrice a week, are the best means for preserving the teeth. Where the patient is of a scorbutic habit, and the gums inclining to softness and sponginess, they may be washed now and then with what is here || advised.

Charcoal reduced to a fine powder is an excellent dentifrice, and by washing the mouth with a little of it diffused in water, it immediately takes away the bad smell from decayed teeth. A lump of the charcoal should be put a second time into the fire till it is red-hot; and when it becomes cool again, the external ashes are to be blown off, and it is to be immediately reduced to a fine powder in a mortar, and kept close stopped in a phial for use.

Tinctures composed of mineral acids diluted, and concealed under various artifices, and gritty substances, tinged of divers colours, are vended in the shops under pompous names, as dentifrices; but although they give a whiteness to the teeth, they nevertheless prove highly pernicious to the enamel, and ought therefore to be used with great caution.

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* ℞. Liniment. Ammon. Fort. ℥j.
Vel
℞. Spirit. Camphorat. ℥j.
Aq. Ammon. Pur. ʒiij.
Effent. Ol. Bergam. gutt. x. M.

† ℞. Pulv. Rad. Pyrethri ℥x.
Spirit. Vin. Rectif. ℔j.
Infund. per dies decem et Cola.
Poſtea adde
Camphor. ℥j.
Ol. Roriſmarin. ℥ſs.
Tinct. Opii ʒij. M.
Fiat Tinctura.

‡ ℞. Pulv. Rad. Pyrethri ʒj.
Mucilag. Gum. Arab. q. s. M.
Fiant Pilulæ xij.

§ ℞. Bol. Armen.
Corn. Cerv. Calcinat. āā ʒij. M.

|| ℞. Tinct. Cort. Peruv. ℥ij.
—— Myrrh. ℥ſs. M.

Of a PAINFUL AFFECTION of the NERVES of the FACE, or FACIEI MORBUS NERVORUM CRUCIANS.

THIS is one of the most painful chronic complaints to which the human frame is subject; and although of rare occurrence, still practitioners have now and then the misfortune to meet with it, and to deplore the severe sufferings of the patient, and the inefficacy of any aid from medicine. It is the Trismus Dolorificus of Sauvage, or Tic Douloureux, by which name it is vulgarly known; but as the one which has been applied to it by a late writer* is more accurate and expressive of its real nature, I have been induced to adopt it.

The late Dr. Fothergill † seems to have been the first author who noticed the disease; since which we have been furnished with some remarks on it by Dr. Haighton in a paper inserted in the Medical Records and Researches, as likewise by Darwin in his Zoonomia. By some it has been supposed to be owing to a cancerous acrimony, but we may with greater reason attribute it to a diseased state of the nerves of the face or their covering. Its true cause has not however been satisfactorily ascertained, but it is well known that the several ramifications of the second branch of the fifth pair of nerves are the parts chiefly affected by it.

The most frequent seat of the affection is the nerves over the cheek-bone, just below the orbit; the alæ of the nose, upper lip, teeth, and gums. When this is the case, it will be found to proceed from the second branch of the fifth pair of nerves, the superior maxillary nerve, which passes through the foramen rotundum, and whose branches are chiefly distributed to those parts. Sometimes the forehead and temple and inner canthus of the eye, and even the globe of the eye itself, are first affected, from the first branch of the fifth pair, the ophthalmic branch being the subject of the disease; and as there are some cases recorded in which the patient suffered much from an effusion of tears, it might probably arise from that branch of the ophthalmic which goes to the lachrymal gland, being the seat of the disorder. When the lower jaw and tongue are affected in addition to the parts already named, the third branch of the fifth pair, or lower maxillary nerve, is diseased. Perhaps as frequently as any of these nerves, is the portia dura of the seventh pair diseased; it gives off branches to most parts of the face, and they communicate with several of those of the fifth pair. The distinguishing mark of its being affected is, that, besides the parts already enumerated, we find pain in the ear, the mastoid process, and the angle of the lower jaw. The disease is then chiefly confined to the fifth pair of nerves, of which most frequently the second branch only is affected, and the branches of the portio dura of the seventh pair. From the intimate connexion however of most of the branches of these nerves with each other, the disease seldom conti-

* See a syftematic account of this diſeaſe by S. Fothergill, M. D.
† Medical Obſervations and Inquiries, vol. v.

nues long without extending its ravages; and in very inveterate cases, all the nerves may possibly be affected.

The only diseases with which Tic Douloureux can be confounded are the rheumatism, hemicrania, and tooth-ach. It is to be distinguished from the first of these by a paroxysm being excited by the slightest touch; by the shortness of its duration, and the extreme violence of the pain: neither are the symptoms similar; for in rheumatism, if acute, there is fever with redness and increased heat in the affected part, and generally some degree of swelling; if chronic, the pain is obtuse, long-continued, and often increased at night; whereas none of these symptoms occur in the morbus crucians faciei.

From hemicrania it may clearly be distinguished by the circumstance of the pain in Tic Douloureux accurately following the ramifications of the affected nerve; and

It may be known from the tooth-ach by the shortness of the paroxysm, and the rapidity of its succession; and during the interval an entire freedom from all pain; the seat of the pain, and its darting in several directions, according to the particular nerve affected, with an acuteness and poignancy differing from that of the tooth-ach, which seems to strike deep, while the pain of the morbus crucians facici is always more superficial and infinitely more lancinating; and lastly, the convulsive twitchings, which, though not always present, are very frequent, and are never experienced in odontalgia.

Stimulating embrocations, blisters, topical bleeding by means of leeches, frictions with mercurial ointment,* and electricity, have been resorted to in the palliative treatment of Tic Douloureux; and the arsenical solution, opium in considerable doses frequently repeated, and the different medicines usually administered in nervous complaints, have at the same time been given internally; but the only mode of exterminating this painful affection is by a division of the nerve. The operation is fully justified by the extreme acuteness of the disorder, and by the considerable degree of success that has attended this mode of treatment. It is well known, however, that the operation, although a radical cure in the part immediately affected, does not always prevent a recurrence of the pain in the collateral branches of the nerves; and therefore, previous to having recourse to it, we should consider whether the nerve or nerves can be divided between the part where the pain originated, and the parts to which it afterwards extended. When this can be done, there will be a probability of operating with success; but when several parts are attacked at the same time, or where the pain extends in several directions from the part primarily impressed, there will be but little reason to expect advantage from an operation.

When the portio dura of the seventh pair (which is distributed very extensively upon the face under the name of pes anserinus) is the seat of the disease, and which may be ascertained by the patient complaining of a pain that begins in the fore part of the cheek sometimes as high as

* See vol. iii. of the Edinburgh Journal for a cafe of Tic Douloureux, fucceſsfully treated with mercurial ointment, ſo as to excite a copious ptyaliſm.

the forehead, and extends itself in the direction of the ear, no relief whatever can be obtained by dividing the second branch of the fifth pair, as such a division cannot possibly give any interruption to the communication between the sensorium and the seat of irritation.

PAIN IN THE STOMACH, OR GASTRODYNIA.

THIS disease often occurs in those who are afflicted with dyspeptic symptoms, such as heartburn, eructations, flatulency, &c.

In addition to what has been mentioned of these complaints under the head of Dyspepsia, it may be proper to notice that cardialgia originates from an inactivity of the stomach, whence the aliment, instead of being concocted by digestion, and converted into chyle, runs into fermentation, producing acetous acid. Sometimes the gastric juice itself becomes so acid as to give pain to the upper orifice of the stomach; and it is probable that violent cardialgia is more frequently owing to an increase of the acidity of the gastric juice than to the acetous acid produced by fermenting aliment.

The heartburn, as arising from indigestion, is often an afflicting and pertinacious complaint, being not unfrequently attended with an emaciation of the body from the want of sufficient chyle. To obtain a temporary relief, we must have recourse to anti-acids, calcareous earths, alkaline salts, the aërated alkaline water, or Seltzer water. To check the fermentation in severe cases, we may employ the diluted acid of vitriol, together with a due quantity of brandy or other spirit lowered with water: but for the purpose of procuring a permanent relief, we should endeavour to strengthen the digestion by the stimulus of a blister externally, and by the use of aromatics, bitters, and chalybeates internally, as advised under the head of Dyspepsia.

The diet should consist of such things as do not easily ferment, such as animal food, shell-fish, and biscuit. It appears by the experiments of Pringle and M'Bride, that the saliva swallowed along with our food greatly prevents its fermentation; and therefore dyspeptic persons should be particularly careful in well masticating what they eat.

Flatulency is to be obviated by carminatives and a due observance of the means just mentioned. Perhaps a waistcoat made so tight as slightly to compress the stomach and bowels might prove serviceable in assisting the digestive process.

In gastrodynia attended with acute pain in the organ, we must have recourse to antispasmodics, particularly æther and opium in combination with stomachic bitters and chalybeates.

The oxyd of bismuth is a remedy which is reported to have been employed with considerable advantage in gastrodynia (see Dyspepsia.) The proper dose is from three to ten grains, with about twenty-five grains of gum tragacanth, repeated three times a day. We had better, however, begin with a dose of three grains, and so increase it gradually.

Of SPRAINS.

ACCIDENTS of this nature happen most frequently in the wrists, knees, and ankles; and are usually occasioned by a slip, or some sudden effort or violent exertion.

Sprains of the tendons and ligaments are usually productive of an immediate painful and inflammatory swelling. In severe sprains there is often not only an increased action of the arteries in the inflamed part, but there is likewise an instantaneous effusion from the rupture of some of the small vessels. In general, we may suppose the effusion to be of the serous kind, as the skin is not altered in colour for some time after the accident; but it sometimes happens that the tumefied parts are either of a deep red or leaden colour from the very first, owing to blood being extravasated from the ruptured vessels.

In the treatment of sprains, two circumstances are principally to be attended to: the first, to prevent, by all possible means, the swelling from arriving at any considerable magnitude; the second, to employ those remedies which are known to be powerful in removing inflammation.

To answer the first of these intentions, restringent applications, such as vinegar, ardent spirits, and the lees of red wine, may be made use of. By immersing the injured part in any of these immediately on receiving the injury, the effusion will be rendered much less than it otherwise would be, and may perhaps be altogether prevented. Plunging the sprained limb into the coldest water that can be procured as soon after the accident as possible, is often attended with the best effect, and may be advised as the first step, till one or more of the articles just mentioned can be procured.

To answer the second intention, of removing inflammation, we may have recourse to local blood-letting by the application of several leeches to the tumefied part; and if the pain and inflammation do not subside readily, they may be applied again the next day. Should any degree of fever attend in consequence of the violence of the sprain, opiates, together with refrigerants, and the remedies which prove useful in other inflammations producing fever, ought to be administered.

In cases where the accident is trifling, or after blood has been drawn off from the part affected, we may apply a diluted solution of the cerussa acetata or aqua lithargyri, by keeping linen cloths dipped in either of them constantly to it throughout the course of the day. At night, a poultice consisting of oatmeal and linseed-meal mixed up with vinegar, may be laid on. This last, however, will not be essentially necessary, except where much tension and pain are present.

With these and such other discutient applications,* proper rest will

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* ℞. Aq. Ammoniæ Acetat. Liniment. Saponis āā ℥j. M.

Vel

℞. Solutionis Sapon. cum Camphor. Aq. Ammon. Acetat. āā ℥j. — Ammon. Puræ ℥fs. M. *Vel*

be necessary for the limb, which never should be kept in a pendent position.

Where a weakness remains in consequence of a sprain, pumping cold water upon the part every morning, and wearing a calico bandage for a considerable length of time, as a support to it, will be the best means to pursue.

Of the GRAVEL and STONE, or LITHIASIS.

THESE diseases depend upon a peculiar disposition of the fluids, and more particularly the secretion of the kidneys, to form a calculous matter, and have been supposed to be owing to the presence of an acid principle in them, termed the lithic acid, which seems confirmed by the benefit derived from a course of alkaline medicines. A long use of fermented liquors, and of wines abounding with tartar, may possibly in some constitutions prove occasional causes of the gravel and stone. It has also been long supposed that water impregnated with sulphat and carbonate of lime, constituting what is called hard water, predisposes persons to to be afflicted with the gravel and stone; but Dr. Henry, in his excellent thesis, looks upon this opinion as an unfounded prejudice. Instances have been adduced where a stone has arisen from the accidental introduction of some substance into the bladder, thereby forming a nucleus. That a morbidly increased secretion of gravelly matter frequently occurs independent of external causes, however, we have the most satisfactory proof in the hereditary disposition of many families to this complaint.

Those who are in the decline of life, and who have been much engaged in sedentary employments, as likewise those who are much afflicted with the gout, are in general very subject to nephritic complaints; but it is a matter of notoriety, that the period of life, from infancy to about fifteen years, is most subject to the formation of calculi, and that the children of the poor are afflicted in a greater proportion than those of the opulent. From the difference in the structure of the urinary passages in the sexes, men are much more liable to them than women. In warm climates we seldom meet with instances of calculous concretions forming of any size either in the kidneys or bladder, as the particles of sand deposited from the urine, usually pass off before they can adhere together, owing to the relaxed state of the parts.

A fit of the gravel is attended with a fixed pain in the loins, numb-

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Vel

℞. Ammoniæ Muriat. ʒij.
Aceti
Spirit. Vin. Rectif. āā ℔ss. M.

Vel

℞. Olei. Succin. Rectificat.
Tinct. Opii āā ʒij.
Adipis Suillæ Præpar. ʒj.
ft. Linimentum.

ness of the thigh on the side affected, nausea and vomiting, and not unfrequently with a slight suppression of urine. As the irritating matter removes from the kidney down into the ureter, it sometimes produces such acute pain as to occasion faintings and convulsive fits.

The symptoms which attend on a stone in the bladder are a frequent inclination to make water, which flows in a small quantity, is often suddenly interrupted, and is voided towards the end with pain in the glans penis. The patient, moreover, cannot bear any kind of rough motion; neither can he make use of any severe exercise without enduring great torture, and perhaps bringing on either a discharge of bloody urine, or some degree of temporary suppression. With these symptoms he experiences pain in the neck of the bladder, tenesmus, itching and uneasiness in the anus, frequent nausea, and sometimes a numbness of one or both thighs, with a retraction of one of the testes.

As all attempts to dissolve a calculus in the kidneys or bladder have hitherto proved ineffectual (whatever certain persons actuated by selfish motives may have alleged to the contrary,) we are to consider the disease as capable of being removed only by lithotomy; an operation always attended with much danger; but more particularly so where the patient is advanced in years, the disease complicated with any organic affection of the parts, and the general health considerably impaired. Under such circumstances it indeed never should be attempted.

When from these or other causes the preference is given to a palliative mode of treatment, we must in that case have recourse to lithontriptics. These will prevent the farther accumulation of calculous matter, and will likewise render the urinary organs less sensible to the irritation of the calculus which exists.

Of the class of lithontriptics, the fixed alkali seems to be the most powerful, and has indeed been most generally employed. It may be used both in its caustic * and mild † state.

The alkaline aërated water is a preparation of the latter kind which has lately been much extolled for its virtues in calculous and nephritic complaints, and is indeed pretty generally substituted instead of aqua kali, and other active lithontriptics, the long exhibition of which is commonly attended with injurious consequences. The quantity of the aërated alkaline water usually taken is about a gill thrice a day, viz. before breakfast, dinner, and supper. When the stomach will bear a greater quantity, an English pint may be taken in a day. If it proves cold to the stomach, or occasions flatulency, a tea-spoonful or two of brandy may be added. Should

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* ℞. Aquæ Kali gutt. xx.—xxx. in Juſculi Cyatho ter in die.
Senſim augeatur doſis.

† ℞. Natr. Præparat. ℈ſs.—℥ij. bis terve in die.

Vel

℞. Kali Aërati ℥ij. bis die in Aquæ diſtillat. ℔j. ſolut.

Vel

℞. Pilul. Sapon. gr. x. pro doſ.

Vel

℞. Aq. Calcis ℔j. in die.

Vel

℞. Aq. Aërat. Alkal. ℔j. in die.

the irritation of the urinary passages be great, it probably may be of use to take a few drops of the tincture of opium with each dose; but this ought to be discontinued as soon as there is an abatement of the pain. No particular diet or regimen is necessary to be observed while using this medicine, farther than abstaining from acids, butter, and fat meats.

Alkaline salts, although possessed of acrimonious properties in their separate state, are nevertheless rendered perfectly mild and inoffensive to the system, by combining them with fixed air, as in the aërated water, and they are found by no means to lose their solvent quality. For the introduction of this water into medical practice the world is indebted to Mr. Colbourne, of Bath, since which, its beneficial effects have been noticed, and strongly recommended by Dr. Falconer, Dr. Percival, and other writers.

When the machine for preparing the aërated alkaline water invented by Dr. Nooth, is not at hand, a medicine nearly similar may be prepared in the following manner: Dissolve grs. 20 of prepared kali in two or three table-spoonfuls of water, and add to the solution a table-spoonful of the juice of lemons. This mixture should be swallowed immediately, and is the proper dose, which may be repeated three or four times a day. It may, however, be doubted if the effects of this would be as powerful as the other. The method of preparing the aërated alkaline water with the machine invented by Dr. Nooth differs from that just mentioned, in adding to each pint of water in the middle of the glass of the machine a quarter of an ounce of the fixed vegetable alkali.

The kali aëratum is a preparation somewhat of a similar nature, which is now used at St. Bartholomew's, and other hospitals, as a lithontriptic, and is given in the dose of two drachms dissolved in a pint of distilled water twice a day. It consists of half an ounce of prepared kali, five drachms of distilled water, and one drachm of prepared ammonia. The kali being dissolved in a water bath, the prepared ammonia is to be added, and when the effervescence is at an end, the mixture is to be set by to crystallize.

Dr. Duncan is of opinion that a solution of the super-carbonate of soda in pure water (in the proportion of four scruples to a pint,) is preferable to the aërated soda water, on account of the carbonic acid gas not being disengaged on exposure to the atmosphere. On the addition of a small quantity of lemon or tartarous acid, a very pleasant effervescence is produced. The carbonate of soda, by being combined with an excess of carbonic acid gas in this preparation, is rendered not only more pleasant to the taste, but less liable to offend the stomach; and Dr. Duncan thinks it is the only form in which the soda can be exhibited in sufficient doses, and for so long a continuance as to derive much benefit from its use in calculous complaints.

Muriatic acid given in doses of twenty or thirty drops three or four times a day, diluted with water, has been found in several cases, where gravel was expelled from the bladder, to afford much benefit, and to ap-

pease the pain in micturition.* It is moreover said to have proved a powerful lithontriptic. The constant and uniform effect of the medicine after a few doses, is stated to be the appearance of a considerable quantity of calculous sediment in the urine. In one instance two ash-coloured concretions were passed from the bladder. In both the fusible and bone-earth calculus it will certainly prove an excellent remedy, but will be of no use in the uric acid calculus, as the reader will observe by perusing a little further.

It had long ago been observed, that gravelly or sabulous matter forms a constituent part of all urine; that it is kept in chemical solution in this fluid, and is eliminated by it out of the system. This matter was proved by chemists to be of an acid nature, and to be possessed of peculiar properties. By Scheele it was denominated lithic acid, but more significantly by Dr. Pearson, uric acid, as pointing out its origin. The composition of different calculi, however, has been shewn to be very different. Dr. Wollaston has particularly designated four species: 1st, the fusible calculus, consisting of phosphoric acid, magnesia, and volatile alkali, and hence called by Fourcroy the ammoniaco-magnesian phosphate; 2dly, the mulberry calculus, consisting chiefly of the oxalate of lime; 3dly, the bone-earth calculus, made up of phosphate of lime or animal earth; and 4thly, the uric acid calculus. Calculi of the latter kind are, however, of far more frequent occurrence than the other sorts. The uric acid, or gravelly matter contained in urine, is partly deposited on cooling; but (unless where it is in unusual quantity) commonly requires for the purpose, one, two, or three days, or till a beginning decomposition takes place.

Dr. Wollaston, in noticing four species of calculus, has, at the same time, pointed out the means of distinguishing one from the other, when even a small fragment can be procured for chemical examination.† The uric acid calculus is soluble out of the body in very weak alkaline preparations, and also in lime-water, but not acted upon by muriatic acid. The fusible calculus is partly soluble in water, highly so in the carbonic acid, and consequently more so in the weakest possible acid impregnations that can be employed; nothing more being necessary for the purpose than the addition of so many drops of weak muriatic acid as will scarcely impart an acid taste. The moriform calculi are the most difficult of solution, and are not acted upon by alkaline solvents; but Fourcroy found that nitric acid diffused in water, in time dissolves them almost entirely, except the animal matter.

The bone-earth calculi are soluble in muriatic acid.

In recommending the use of lithontriptics for calculi in the urinary organs, the physician ought therefore to endeavour to ascertain the nature of the concretion with which his patient is afflicted. Possibly

* See Memoirs of the Medical Society, vol v. article 8. and vol. vi. article 80.

† See vol. iv. p. 486, and vol. v. p. 306, of the Medical and Chirurgical Review, for an account of the varieties of urinary calculi, and the valuable experiments of Dr. Wollaston and Dr. G. Pearson on the subject.

some advantages might be derived, and the solution of a stone in the bladder attempted by means of injections through the urethra, consisting of the substances found to dissolve calculi out of the body, and the operation of lithotomy thereby be avoided.

The uva ursi* is another remedy which has sometimes been employed in lithiasis as well as in nephritis; but it possesses no lithontriptic power, and only serves to brace the parts and render the secretion more natural.

In violent paroxysms of pain, recourse must be had to fomentations applied both externally and internally;† and where these prove ineffectual, the patient should be put into a warm bath. With these means he should drink plentifully of diluting mucilaginous liquors, and take some proper opiate,‡ which he may repeat according to the urgency of the symptoms.

In cases of gravel the solution of the calcareous matter is to be attempted by the same means which have been recommended for a stone in the bladder. In those diseases which arise from a relaxation of the kidneys and bladder, the uva ursi with the alkaline aërated water will be likely to prove highly serviceable.

During an acute fit of the gravel, where nephritis ensues, or is to be apprehended, we should draw off a quantity of blood proportionable to the age of the person, after which he ought to be put into a warm bath. When taken out of it, flannel cloths wrung out in a warm infusion of emollient herbs, or bladders filled with warm water, may be applied immediately over the part; emollient and anodyne clysters § may be injected frequently, as advised for the stone, and opiates ‖ be admi-

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* ℞. Pulv. Uvæ Ursi ℈j.—℥ſs.
Aq. Puræ ℥jſs.
Spirit. Juniip. ℥j.
Syrup Cort. Aurant. ℥ij. M.
ft. Hauſtus ter in die ſumendus.
Vel
℞. Pulv. Uvæ Urſi ℥ſs.
Pulp. Prun. Gallic. ℥j.
Syrup. Althææ q. s. M.
ft. Electuarium cujus ſumat quant. nuc. moſch. ter in die.

† ℞. Terebinth. Venet. ℥ij.
Vitell. Ovi ij. vel q. s. ad ſolut. et adde
Decoct. pro Enemate ℥xij.
Magn. Vitriolat. ℥ſs.
Ol. Olivæ ℥j.
Tinct. Opii gutt. xxx. M.
ft. Enema.
Vel
℞. Terebinth. Vulg. ℥j.
Ovi Unius Vitell. vel q. s. ad ſolut.
Decoct. Avenæ ℥xij.
Tinct. Opii gutt. xxx. M.
Vel
℞. Decoct. Sem. Lini ℥xij.
Natr. Vitriolat. ℥ſs.
Ol. Ricini ℥ij.—℥j.
Tinct. Opii ℥ſs.—℥j. M.
ft. Enema.

‡ ℞. Aq. Fœnicul. ℥jſs.
—— Kali gutt. xxv.
Spirit. Æther. Nitros. ℥ſs.
Tinct. Opii gutt. xx.—xxx. M.
ft. Hauſtus 4tis horis ſumendus.

§ ℞. Decoct. Amyli ℥xij.
Ol. Olivæ ℥ſs.
Tinct. Opii gutt. lx. M.
Pro Enemate.

‖ ℞. Opii Purificat. gr. j.
Extract. Glycyrrhiz. gr. ij. M.
ft. Pilul 4tis vel 6tis horis repetenda.
Vel

nistered repeatedly until the pain and irritation are removed. To assist these means the patient should drink freely of mucilaginous diluting liquors, such as linseed-tea, solutions of gum arabic, and a decoction of barley; to which may be added a small quantity of nitre if much febrile heat prevails, or there seems any tendency to inflammation.

If the pain and heat in the region of the kidney do not abate in twelve hours, and the pulse remains equally hard and frequent, the venesection may be again repeated.

When the pain has somewhat subsided, it will be right to give some opening medicine, such as the oleum ricini; but if the stomach should reject this, about two drachms of magnesia vitriolata in linseed-tea, with or without four or five drops of the tincture of opium, may answer the intention.

Diuretics and blisters would be improper.

In local pains from the stimulus of any extraneous body, as in gravel descending along the ureter, the application of cold on or near the part affected may often be used with a very salutary effect. Dr. Darwin mentions a case of this nature where a gentleman who had laboured under excessive and continued pain from gravel in the ureter, found instantaneous relief very frequently in the day, by applying on the painful part a bag of snow or pounded ice, and suffering it to dissolve. When these cannot be procured, cold may be generated by allowing æther to evaporate on the part so as to render the vessels torpid or inactive.

The diet of those who are afflicted either with the stone or gravel should be light and nutritive, carefully avoiding fermented liquors, wines abounding with tartar, and all acids. Spring or soft water will be preferable to pump water. The alkaline aërated water will be very proper for those who are afflicted either with stone or gravel. From various experiments, we seem authorized in concluding, that acids of every kind are prejudicial, and give rise, in those disposed to these complaints, to the formation of gravelly and calculous concretions, by causing a separation and crystallization of the uric acid contents of the urine within the body.

It is, indeed, a matter of common observation, that calculous and gravelly complaints are aggravated by acid and acescent drinks of all kinds, and that alkaline substances alleviate these disorders.

Seltzer water has sometimes been employed with much advantage in diseases of the urinary organs, especially those which are attended with the formation of calculus. What solvent power it may exercise over these concretions is not yet determined; but it is certain that under the use of this remedy the mucous, sabulous, and often purulent discharge which

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Vel

℞. Aq. Fœniculi ℥jſs.
Tinct. Opii gutt. xxxv.
Syr. Althææ ℥ij. M.
ft. Hauſtus quartis horis ſumendus.

Vel

℞. Mucilag. Gum. Arab. ℥ſs.
Aq. Fœnicul. ℥j.
Spirit. Ætheris Nitros. ℥ſs.
Tinct. Opii gutt. xxx.
Syrup. Althææ ℥ij. M.

accompanies the urine, is rendered less painful; and, in general, micturation is much less difficult.

Painful complaints of the kidneys and bladder connected with the formation of calculus, are said to be much relieved by an internal use of the Buxton water, and its use as a bath is found greatly to assist its employment as an internal medicine.

Many who have been much incommoded with gravelly complaints have experienced relief by using the garden-leek, prepared in the following manner:

Take a handful of the roots or fibrous parts, with a few sprigs of fennel, and boil them in two quarts of water, over a gentle fire, until the half is evaporated; then pour off the remainder, strain it, and drink about a pint a day.

ORDER VIII.

DIALYSES.

DISCONTINUITY of a part manifest to the sight or touch.

Of an ULCER or ULCUS.

IN including ulcers among the other diseases, it is by no means my intention to interfere with what belongs to the province of surgery, and only a few remarks will therefore be made on such as are accompanied by an affection of the system, taking notice at the same time of Mr. Baynton's new method of treating those of an obstinate nature.

Ulcers usually proceed from some external injury, such as a wound or bruise, being afterwards kept open by neglect or an improper mode of treatment; or they arise in consequence of inflammation, syphilis, scurvy, or some other disease.

When an ulcer is of long standing, and has become habitual, or seems to serve as a drain in carrying off some peccant humour from the body, it should by no means be healed up without substituting an artificial discharge in its stead, by means of one or more issues, as many have fallen martyrs to imprudences of this nature, but more particularly those who have been somewhat advanced in life. Where an ulcer is of a recent nature, it ought to be healed up as expeditiously as possible, with the assistance of precipitate and light bandages carried from the foot and ankle upwards.

Where the granulations rise above the level of the skin, the vitriol of copper may be substituted, as repressing them, and leaving the surface more disposed for cicatrization. Mr. Home recommends the application of rhubarb in these cases, but its powers seem of rather too feeble a nature.

To sweeten fetid ulcers, and dispose them to granulate favourably, a poultice composed of half a pound of the common farinaceous cata-

plasm, and two ounces of wood charcoal, well mixed together, is often employed with a most happy effect. Carrots boiled a sufficient length of time, and then mashed into a pulp, so as to form a poultice of a proper consistence, are also used in cases of this nature with a similar good effect. In ulcers requiring to be treated with powerful antiseptic remedies, the Cataplasma Effervescens of the Pharmacopœia Chirurgica (as directed to be prepared under the head of Gangrene) will be the most proper application.

The powder of the bark of xanthoxylon (known in the West Indies by the name of Hercules's club) applied to the surface of inveterate ulcers, has lately been found to be a powerful remedy in cleansing and rapidly promoting the healing action after the sloughing process in them has been corrected.

In ulcers of long standing, and where the habit of body is vitiated, besides attending to the local affection, it will be right to endeavour to amend the depravity of constitution, by administering medicines of an alterative nature, such as Plummer's pill, a solution of muriated mercury, and a decoction of the woods. Where we have reason to expect a venereal taint to be lurking in the constitution, these medicines will be indispensably necessary. See Syphilis.

Where ulcers arise in consequence of scurvy, the remedies advised under that head must be resorted to, besides attending to the sores.

It not unfrequently happens, that a combination of the different kinds of ulcer takes place, and that the callus is attended with a specific morbid action. The latter may be removed, and yet the ulcer may be intractable from assuming the former character. Whatever plan of treatment be adopted, it appears evidently the intention to reduce the sore to a state of a simple ulcer. Whether in this form, or attended with callous edges, the plan of treatment recommended by Mr. Baynton will be proper. He advises as follows:

The parts should be first cleared of that hair which is sometimes found in considerable quantities upon the legs, by means of a razor, that none of the discharges, by being retained, may become acrid and inflame the skin, and that the dressings may be removed with ease at each time of their renewal, which in some cases, where the discharges are very profuse and the ulcers irritable, may perhaps be necessary twice in the twenty-four hours, but which I have, in almost every instance, been only under the necessity of performing once in that space of time.

The plaster should be prepared for spreading, by melting in an iron ladle over a slow fire, four ounces of common plaster of diachylon, with half a drachm of yellow resin; when melted, it should be stirred till it begins to cool, and then be spread thinly upon slips of smooth porous calico of a convenient length and breadth, by sweeping it quickly from the end that is held by the left hand of the person who spreads it, to the other end that must be held firmly by another person, with the common elastic spatula that is used by apothecaries; the uneven edges must then be cut off, and the pieces so prepared, cut into slips of from two to three

inches in breadth, and of a length that will, after being passed round the limb, leave an end of about four inches.

The middle of the piece so prepared, should then be applied to the sound part of the limb, that is opposite to the inferior part of the ulcer, so that the lower edge of the plaster may be placed about an inch below the edge of the sore, and the ends should then be drawn over the ulcer with as much gradual extension as the patient can well bear; other slips should be secured in the same way, each above the other, until the whole surface of the sore and the limb are completely covered with the plaster, at least an inch above and below the diseased part.

The whole of the affected parts should then be defended with pieces of soft calico, three or four times doubled and very evenly applied; and a calico bandage of about three inches in breadth and four or five yards in length, or rather as much as will be sufficient to support the limb from the foot to the knee, should be applied with as much firmness as can be borne by the patient, and as much evenness as can be obtained by the attention of the surgeon, by passing it first round the leg at the ankle joint, then once or twice round the foot, and afterwards up the limb till it reaches the knee, observing that each turn of the bandage should have its lower edge so placed, as to be about an inch above the lower edge of the fold next below.

The whole of the parts that are at all affected should then be well moistened with cold spring water, poured from a large tea-pot; and it should, if the parts be much inflamed, or the discharges either acrid or profuse, be renewed as often as the heat of the parts may indicate, or perhaps at least once in every hour. The patient may then take what exercise he pleases, "as I have," Mr. Baynton says, "been generally told by mine, that they have been easier when they walked much; and have generally found that their cures have not been retarded, but on the contrary, most times accelerated by their exertions in that way; and I think it will be obvious, that cures which are obtained under such treatment, will be much more lasting than those that are accomplished in any way where the patient is confined to his bed."

Mr. Baynton adds, "I have chosen to apply the means here recommended to those cases that have fallen under my care, at an early hour in the morning; that is, before the œdema has come on which so frequently attends such cases; first, with a view to restore the tone of the refluent vessels, by supporting their sides, when in a natural state, and secondly, with the expectation of being able to bring the divided edges nearer together, whilst the parts are in that situation, and the skin relaxed, than it would be possible to do when the parts are distended by tumefaction.

"I have also preferred the use of calico to linen, from much experience of its superiority in many respects: it does not subject the parts to that inconvenient and undue stricture that is experienced in the use of linen; it is more pervious, and consequently prevents the formation of sinuses, which might be occasioned by a complete retention of the discharges, if accompanied by the pressure so much recommended; it appears to possess more of the accommodating properties of

the true skin, and by its elasticity is well calculated to yield a little to muscular action, whilst it affords sufficient support to the parts; and lastly, it is much cheaper. I have before said, that porous calico will be found most useful, and I prefer that which being smooth and free from inequalities, is to be bought at about a shilling a yard, to that which is more expensive, and less pervious. As a bandage too, I think it much preferable to either linen or flannel; it is more elastic, soft, and accommodating than the former; and besides being less cumbrous and more cleanly than the latter, possesses the additional advantage of being a much better conductor of that morbid heat which so constantly affects inflamed parts, and which it is essential to remove."

The many cases cited by Mr. Baynton in his tract,* seem clearly to establish the superiority of this method of treatment over every other that has yet been adopted, and to prove that speedy cures may be obtained in the worst and oldest ulcers, of the poorest people, even where the true skin cannot be brought forward, so as in any degree to cover the denuded parts.

Mr. Baynton asks, to what circumstances are we to ascribe these facts? and goes on to say, they cannot surely be referred to the ingredients of the adhesive plaster, to the effects of the bandage, to the exercise that is used, nor to any constitutional interference, as the same effects have always followed the application of these principles, whether the patients have been young or old, robust or emaciated, temperate or disorderly; whilst ointments, composed of the same ingredients as the adhesive plaster, bandages, exercise, and all the means except the *endeavour to bring the divided parts together*, to which it may be supposed the cures can be attributed, had been tried in every way in most cases without any such advantages being obtained.

This question Mr. Baynton answers himself, by referring to Mr. Hunter's doctrine on this subject, which teaches, that sores, in their progress of healing, are lessened in their extent, by a contraction of the newly formed granulations, and that this contraction is assisted by the mechanical effects of the adhesive plaster applied in the way just mentioned.

Another theory, as to the modus operandi of the remedy, has been suggested by Mr. Simmons,† surgeon to the Manchester Infirmary, who approves highly of the employment of adhesive plasters, as recommended by Mr. Baynton, and seems to consider it as one of the greatest improvements in modern surgery: he has found that more can be accomplished by it in one week, than could be effected in several according to the old method.

Mr. Baynton, he observes, considers the efficacy of his plan as depending on the endeavour to bring the divided parts nearer together. But whoever attends to its effect, on an extensive old ulcer, on the interior part of the leg, for example, will see the impossibility of bringing the original skin to approximate. Admitting his facts, the

* See his Descriptive Account of a new Method of treating old Ulcers of the Legs.
† See Dr. Duncan's Annals of Medicine for 1797, article the 14th.

benefit may be produced in two ways: *first*, by acting as a bandage, giving tone, and removing induration; and *secondly*, by keeping the ulcerated surface level with the surrounding skin. The process of skinning resembles the freezing of water, or the crystallization of salts, both of which are facilitated by an even surface, which is essential to the due configuration of the crystals. On the same principle it is, that the adhesive plasters are so efficacious. Such are this gentleman's sentiments on the modus operandi of the method proposed by Mr. Baynton, and they seem very plausible.

Of SCALDS and BURNS.

In all accidents of this nature, it seems to be of the utmost importance to apply a remedy at the instant; for by this means the violent anguish is allayed, and vesication, which in scalds at least is usually so considerable as to lay the foundation for a tedious curative process, is in a great degree prevented. Of the remedies most quickly to be procured on such occasions, plunging the part which has sustained the accident, without a moment's delay, into very cold water, or pumping upon it, is of the greatest service. The transition from torture to ease will be truly rapid. Water is always at hand, and after proper immersions in it for a due length of time, it may be sufficient to cover the injured parts with linen rags moistened therewith, passing over them from time to time streams of air by means of a small tube or bellows, until a sense of freezing or a considerable degree of cold arises. Æther or alcohol, as being easily evaporable, might probably be used also with advantage. By this simple process, a large piece of skin that has been burned to the appearance of charring, and surrounded by a high degree of inflammation, has been perfectly cured in the course of a very short time, no sloughing or ulceration taking place, but the crust coming off dry, and leaving a sound surface.

Of late, the application of ice has been much recommended by Sir James Earle and a few other practitioners of eminence.

It has long been the practice of St. Thomas's Hospital, in cases of burns or scalds, to smear the parts well with a feather dipped in the oily liniment inserted below;* but it seems a very inefficacious application, and I think it will be more advisable to apply linen cloths wetted with either cold water, æther, alcohol, or what is here† recommended, as long as the parts are occupied by heat and inflammation. When these subside

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* ℞. Olei Olivæ. ℥iij.
Aq. Calcis ℥vj. M.
ft. Linimentum.

† ℞. Spirit. Vin. Rectif. ℥ij.
Aq. Calcis ℔ß. M.
ft. Lotio.

Vel

℞. Aq. Lithargyr. Acet. ℥j.
Spirit. Camphor. ℥ij.
Aq. Distillat. ℔j. M.

Vel

℞. Aq. Lithargyr. Acet. ℥j.
— Distillat. ℔j.
Spirit. Vinos. Rectif. ℥ß. M.

the liniment may be used, or we may employ the unguentum ceræ spread on fine lint as the dressing.

To alleviate pain and procure rest, in cases where the injury is of an extensive nature, it will be right to have recourse to opiates.

When much febrile heat ensues, we should employ gentle laxatives and refrigerants; in short, the antiphlogistic plan should be strictly pursued.

If the parts become livid and black, so as to threaten the coming on of a mortification, then the Peruvian bark and wine, with the other means advised under that particular head, must be resorted to.

Instead of the application of cold water, ice, and the other soothing means just mentioned, a plan of a directly opposite nature has lately been recommended by Dr. Kentish.* He advises to apply stimulants externally, such as spirits of turpentine, the liquid volatile alkali, and æther so managed as to avoid the cooling process of evaporation.

In their application, we are directed to proceed as follows: The injured parts are to be bathed two or three times over with spirits of wine, or spirits of wine with camphor, or spirit of turpentine, heated by standing in hot water. After this, a liniment is to be applied on soft cloth, composed of the common yellow basilicon, softened with spirit of turpentine. This liniment is to be renewed only twice in twenty-four hours, and at the second dressing the parts are to be washed with proof spirit, or tinctura opii made warm. When a secretion of pus takes place, milder applications must be made, till the cure is effected.

To excite the system at the same time, he recommends the internal use of æther, brandy, opium, and other stimulants, which are to be given in proportion to the degree of injury, immediately after the accident, and to be repeated once or twice within the first twelve hours, and afterwards wine or ale till suppuration takes place, when it will be no longer necessary to excite the system.

On this mode of treatment so highly spoken of by Dr. Kentish, I have to remark, that it requires not only his own further experience, but likewise the concurrent testimony of other practitioners. Before we relinquish the cooling and soothing plan, we should be fully satisfied that the stimulant one has really superior advantages. Mr. Bell has indeed lately favoured us with some observations† which tend greatly to recommend it. His words are, "The superiority of the stimulating practice is manifested in this; that when the essential oil of turpentine is applied to a scalded or burned part, relief is, in most cases that I have seen, produced within half an hour, provided that the remedy is made use of as soon after the accident as possible; nor have I observed any case, under the above circumstances, where the pain was protracted more than two hours.

* See his Essay on Burns.

† See Medical and Physical Journal, vol. iii. p. 206.

"In several slight cases where I have seen cold water made use of, it always required six, and not unfrequently eight hours, to free the sufferer from agony; for the moment the application of cold water ceased, the pain returned with much greater violence." He adds, "I recollect a case which an eminent surgeon in Newcastle, Mr. Anderson, communicated to Dr. Kentish more than two years ago, and which is most decidedly in favour of what is here advanced. A lady had both her arms severely scalded with boiling water, from above the elbows down to the finger ends. The ol. terebinth. was applied to one arm soon after the accident, and the other plunged into cold water, which was renewed as often as it became warm. That arm to which the ol. terebinth. was applied became perfectly easy in about half an hour; the other continued to give pain, when taken out of the water, even for an instant, for more than six hours: and as far as I recollect, it required a much longer time for its cure than the other."

By further information from Dr. Kentish,* we are given to understand that the faculty in his neighbourhood† have almost all adopted his mode of practice on the fullest conviction of its efficacy. It appears likewise that Mr. S. Hammick, jun. of the royal navy hospital at Plymouth, has favoured him with his opinion of its superior merit to every other means used in that extensive institution, where he has an ample field for experiment, from the frequent explosions of gunpowder on board his Majesty's ships. His words are, "I am decidedly of opinion that the practice of applying immediately to burns the spirit of turpentine, is the best I have ever yet seen adopted, as the process to suppuration is, in general, more rapid, and those irregular marks, or seams, found after other applications, are not to be met with after the turpentine; neither is the skin so disposed to crack, or break open again, as was formerly too often the case, producing the most troublesome and irritable sores."

In Dr. Kentish's second Essay on Burns, in which he attempts to refute the opinion of Sir James Earle, on the supposed benefit of the application of ice in such accidents, a number of additional proofs are brought forward to establish the superiority of his stimulant mode of treatment over that of cold applications. In the detail of practice he has however been induced to make some alterations from his original plan, notwithstanding that he therein pursues the principle of treatment recommended in his first Essay. His words are, "In the first species, *where the action of a part only is increased*, I have not found any thing better for the first application than the heated ol. terebinth. and the digestive thinned with the same. In superficial burns, when the *pain* has ceased, it will be advisable to desist from this application in about four-and-twenty hours, as that time, in many cases, will be sufficient, and at the second dressing, a digestive sufficiently thinned with common oil, will be adequate to the case, and on the third day to begin with the ceratum e lapide calaminare. I have frequently seen secondary inflam-

* See Medical and Physical Journal, vol. iii. page 262.
† Newcastle upon Tyne.

mation excited by the remedy, which in the first instance puzzled and perplexed me considerably. I have likewise been informed of this consequence by several gentlemen. The most certain *remedy* for this unpleasant symptom is to apply a plaster with digestive thinned with oil, or a plaster of cerate, and over that a *large warm* poultice. This most effectually takes off the irritation of the part, and the cerate will finish the cure. Should there be much uneasiness of the system, an anodyne proportioned to the age of the patient should be given."

Mr. Parkinson, of Leicester, is another advocate for the stimulating plan, and speaks highly of the efficacy of spirits of wine in relieving the pain and inflammation occasioned by burning or scalding any part of the body.* The mode of treatment he recommends is to cover the parts with pieces of bladder, softened by dipping them in warm water, keeping the outer surface constantly wetted with the spirits. He mentions that the pain usually ceases in half an hour, but in deep and extensive burns the application must be continued for twelve or twenty-four hours, at the end of which time the inflammation will be found to be entirely removed. To heal the ulcer, a cerate of wax and oil may be applied.

In the second volume of Medical Facts and Observations, the late Mr. John Hunter has stated the communications of an eminent brewer at Edinburgh (Mr. David Cleghorn) on the subject of burns and scalds, which accidents have been very successfully treated by applying vinegar. The good effects of vinegar in these cases Dr. Kentish is inclined to attribute to the alcohol it contains.

Between the advocates for the adoption of a cooling treatment and those who recommend a stimulating one, there seems indeed a perfect opposition both in theory and practice. My opinion is, that the cooling treatment will be most advisable while the sensation of heat and pain exists; but when these are removed, and symptoms of debility occur, or when they primarily appear, I think the stimulant plan ought to have the preference.

Much certainly depends on the constitutional variety of the subjects, as well as on the different stages or degrees of the accident. Perhaps if no other inconvenience than a slight vesication of the injured parts is sustained, no remedy can be more aptly resorted to than the refrigerant application of cold water: but when the integuments are so burned that the cuticle is entirely destroyed, and the parts are affected with great vesication and pain, and there is at the same time inaction in the system, with symptoms of irritation, then the stimulant qualities of the terebinthinate application will certainly be preferable, as the sedative effects of cold under such circumstances might extinguish the vital principle.

* See Memoirs of the Medical Society, vol. v. article 7.

Of HERPES.

HERPES consists in an eruption of broad itchy spots dispersed here and there over the skin, of a whitish or red colour, which at length run into each other, discharge a thin serous fluid, and either form extensive excoriations or ulcers. After a certain time scurfy scales appear, which peel off, and leave the under surface red; the same appearances are, however, renewed in a successive series, till the disease is either cured, or goes off spontaneously, which is indeed rarely the case. Being a local complaint, and confined to the skin, it seldom happens that the general health suffers any change.

Its causes may be referred to a want of cleanliness, a low diet, and a damp situation; but certain constitutions seem nevertheless particularly predisposed to herpetic eruptions.

The cure of herpes is to be effected by lotions of vitriolated zinc, and cerussa acetata, as advised under the head of Ring-worm, together with ointments composed of calcined zinc,* mercury, or the sulphuric acid, as recommended for the itch.

A strong decoction of the fresh leaves of digitalis I have found to be a very good external application to herpetic eruptions.

Touching the affected parts twice or thrice a day with a little of the fresh oil of walnut-kernel has also proved a very excellent remedy in herpetic complaints.

Where the disease is inveterate, it may be necessary to have recourse to the internal use of medicine, such as pills of calomel and antimony,† a solution of muriated quicksilver, a decoction of elm-bark, sarsaparilla, or guaiacum, or the sulphuric acid julap,‡ together with a vegetable and milk diet. A warm bath will likewise be proper.

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* ℞. Zinc. Calcinati ʒfs.
Adipis Suillæ ℥j. M.
ft. Unguentum.
Vel
℞. Unguent. Calcis Hydrargyr. Alb.
Vel
Unguent. Hydrarg. Nitrati.

† ℞. Calomelanos
Sulph. Antim. Præcip. āā ʒj.
Guaiac. Gummi-resinæ ʒij.
Bals. Copaib. q. s. M.
Fiant Pilul. lx. Capiat j.—iv. omn. noct. hora, decubitus.

Vel
℞. Antimon. Tartarisat. gr. xv.
Calomelanos ʒj.
Opii ʒfs.
Syrup. Simpl. q. s. M.
Fiant Pilulæ lx. Sumat æger j. mane et nocte.

‡ ℞. Acid. Sulphuric. ʒij.
Aq. Fontan. ℥jfs. Post effervescentiam adde
Syrup. Simp. ʒij. M.
Capiat ʒj. vel ʒij. bis terve in die ex Aquæ Puræ cyatho.

Of the SCALD HEAD, or TINEA.

THIS disease consists in a scabby eruption of the hairy scalp, arising from an obstruction to its excretion, which being confined, generates a peculiar acrid matter, eroding the skin of the head, and afterwards spreading its acrimony to the adjacent parts. Children are principally affected with it, particularly those of the poor.

Tinea capitis arises most commonly from uncleanliness, improper food, or an unhealthy nurse; but it is sometimes occasioned, probably, by contagion from immediate contact, or by combing the hair with a comb imbued with the matter from the head of a diseased person.

When proper means are adopted, the disease seldom proves of difficult cure.

The treatment consists in shaving the head close, and afterwards covering it with an ointment made of sulphur and pitch, or muriated mercury and pitch, previous to the daily application of which * it may be washed with a little of either of the lotions † here advised. If these should fail, we may substitute astringent or stimulating applications, paying a cautious attention at the same time to the general health.

In those scurfy eruptions of the head which are observed in children, and where a thin ichor pervades the cuticle and excoriates the parts, the application of a little of the ointment marked thus ‡ will be found of considerable utility, and will indeed seldom fail of effecting a radical cure. It should be applied every night, covering the parts with a bladder or linen, and again be washed off in the morning with soap and water.

In the cure of tinea capitis, cutting off the hair as close as possible, well washing the parts with warm soap and water, and afterwards sprinkling them pretty thick with powdered charcoal night and morning, has proved very efficacious.

Besides these external applications, it may sometimes be necessary to

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* ℞. Picis Liquid. ℔ss.
Ceræ Flav. ʒss.
Flor. Sulph. ʒij. M.
ft. Unguentum.

Vel

℞. Unguent. Picis ʒij.
Hydrargyr. Muriat. gr. vj. M.
ft. Unguentum.

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† ℞. Nicotianæ ʒij.
Aq. Fontan. ℔j. Coq. ad. ℔ss. et Colaturæ adde
—— Kali ʒj. M.
ft. Lotio.

Vel

℞. Kali Sulphurat. ʒss.
Aq. Calcis ℔j.
Bals. Saponis ʒj. M.

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‡ ℞. Cret. Præparat.
Calc. Hydrargyr. Alb. āā ℈j.
Cerussæ Acetat. ʒss.
Unguent. Hydrargyr. Nitrat. ʒij.
—— Picis ʒij. M.
ft. Unguentum.

administer alterative medicines* at the same time. The doses must be varied according to the age, constitution, &c. of the patient; and if acidity abounds in the primæ viæ, some absorbent, such as the creta præparata, or magnesia, according as the bowels may be more or less affected, should be combined. In all cases the body ought to be kept open. The occasional use of a lukewarm bath might probably be of some service.

The eruption in tinea has been known to give way to the internal use of sulphuric acid, where only wheat flour has been applied externally. It is said to have been frequently cured likewise by testaceous powders alone; two materials very different in their chemical properties, but agreeing in their power of promoting cutaneous absorption.

If the glands of the neck should happen to swell, on the head becoming dry, we ought to advise the insertion of an issue in the neck, or the occasional application of a blister to it.

The diet in tinea capitis should be wholesome and nutritive, avoiding salted meats and fish.

Of the ITCH, or PSORA.

THE Itch is evidently confined to the skin, and never affects the general system, however great its irritation.

It arises most usually from infection, communicated by coming into immediate contact with the body of a person already affected, or by wearing the same clothes, or lying in the same bed-linen that he has done; but it is sometimes produced by unwholesome food, bad air, and a neglect of cleanliness. Those who reside in a cold mountainous situation seem particularly predisposed to it; hence these united causes make it a disease of very frequent occurrence among the highlanders of Scotland.

The itch shews itself in small pimples about the fingers, wrists, hams, and waist, which after a short time become so many pustules, and are attended with such an itching as to occasion a constant desire to scratch. When they break, the acrid fluid which they contained, falls on the neighbouring parts, and thereby spreads the disease over almost the whole body, if proper remedies are not used to check its progress. Where the pustules are very large, and attended with much inflammation, they are apt to run into boils. The animalcula which are seen in the pustules are the effect, not the cause of them; as all other stagnating fluids abound with microscopic animals.

The remedy which has been employed with the greatest success in the cure of this disease is sulphur, which is not only used externally in the

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* ℞. Magnes. Calc.
Hydrarg. cum Sulph. ää gr. v.
Calomel. gr. ¼—½. M.
ft. Pulvis hora somni sumendus.

Vel

℞. Calomelanos ʒfs.
Antimon. Tartarisat. gr. xv.
Opii Purificat. ʒfs.
Syrup. Simpl. q. s. M.
Fiant Pilulæ lx. quarum sumat æger j. vel ij. omni nocte hora decubitus.

form of ointment, as in the unguentum sulphuris, but is sometimes also given internally. As its external use, although very efficacious, is however attended with much inconvenience from the dirtiness of its application, as well as its disagreeable smell, other remedies are frequently substituted. The most efficacious of these are a solution of arsenic, or muriated quicksilver;* different combinations of the sulphuric acid,† white hellebore,‡ and a strong decoction of digitalis. In several cases of psora, I have succeeded by employing merely a strong infusion of tobacco as a lotion, two or three times a day.

Besides the hydrargyrus muriatus, other preparations of mercury have been employed with success, as in the formulæ specified below:§ should any of these occasion heat, rash, or other effects of too powerful a stimulus applied to the skin, they are to be relieved by substituting a little plain lard, instead of the ointment, and this application is to be continued until the troublesome symptoms are perfectly removed.

That species of the itch which consists of small ulcers in the skin is readily cured by an internal use of the acid of sulphur, which increases the cutaneous absorption. The external application of sulphur, mercury, and acrid vegetables, acts on the same principles.

Such as are afflicted with the itch should be debarred the use of high-seasoned dishes, salted meats, fish of all kinds, and heating liquors; their diet consisting principally of vegetables and milk, with a small proportion of animal food. They should shift their linen frequently, and pay the greatest attention to cleanliness. When the unguentum acidi sulphurici is used, the parts to which it is applied should be covered with flannel instead of linen, on account of the destructive effects of the acid on vegetable substances.

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* ℞. Hydrargyr. Muriat. gr. vj.
Ammon. Muriat. gr. x.
Aq. Diftillat. ℥iv. M.
ft. Lotio.

Vel

℞. Hydrargyr. Muriat. gr. x.
Ovi Unius Vitellum.
Adipis Suillæ Præpar. ʒij. M.
ft. Unguentum.

† ℞. Acidi Sulphurici ʒfs.
Adipis Suillæ Præparat. ℥j. M.
ft. Unguentum.

‡ ℞. Helleb. Albi Pulv. ℥j.
Adipis Suillæ Præpar. ℥iv. M.
ft. Unguentum.

Vel

℞. Pulv. Rad. Helleb. ℥j.
Aq. Diftillat. ℔ij.
Decoque ad libram unam, et liquori frigefacto et colato adde
Spirit. Vinos. Rectif. ℥ij. M.
ft. Lotio.

§ ℞. Calc. Hydrargyr. Alb. ʒj.
Calomelanos ʒfs.
Lac. Sulphuris ʒij.
Ol. Effent. Lavend. gutt. xl.
Adipis Suillæ ℥ij. M.
ft. Unguentum omni nocte hora decubitus applicandum.

Vel

℞. Calc. Hydrargyr. Alb. ʒij.
Ceruffæ Acetat.
Kal. Præparat. ää gr. x.
Unguent. Simpl. ℥ij.
Effent. Bergamot. gutt. xx. M.
ft. Unguentum.

Of the RING-WORM, or IMPETIGO.

THIS is a cutaneous disease, and arises most frequently from coming in contact with those already affected by it; but in some habits there seems a predisposition to it. It is a disorder more frequently met with in warm climates than in cold ones; is of a contagious nature, by contact, and in inveterate cases is very difficult to eradicate.

It shews itself in small red pimples, which break out in a circular form, and contain a thin acrid fluid. When the body is heated by exercise, these itch intolerably, and upon being scratched, discharge their contents, which, by falling on the neighbouring parts, spread the disease to a considerable degree. The original size of the circle formed by the pimples, is usually about that of a sixpenny piece; but in process of time it will become, by neglect, as large as the palm of the hand.

In some cases, the disease is so universal that the habit becomes tainted; the skin puts on a leprous appearance, is much disfigured with blotches, and the unhappy patient enjoys not a moment's ease from the intolerable itching and painful excoriations.

Where the disease is not of an inveterate nature, it may easily be removed by washing the parts affected with some kind of astringent lotion;* and where this fails, recourse may be had to the remedies advised for the cure of the itch. The application of mushroom catsup to the pimples is reported to be a very efficacious remedy. A poultice of the flowers of the ring-worm bush, French guayava tree (cassia alata) is much employed in the West India islands.

It seldom happens that an internal use of medicine is necessary. Where the disease is very inveterate, some gentle alterative, such as Plummer's pill, with a decoction of the woods, may probably be most proper. See Herpes.

Many of the schools in the vicinity of London have of late, I understand, been much annoyed by the appearance of this disease among their youth under a very inveterate form, and chiefly occupying the hairy scalp. This peculiarity is owing, no doubt, to using the same comb for the infected and the healthy; and in this way it may very readily be communicated. By an inattention to this circumstance, I was once a witness of the disorder being very generally propagated through a large school of boys. They were in fact inoculated with the teeth of the comb imbued with matter from the head of the boy who was first affected, and who was an Indian or Creole lately arrived from the West Indies.

The ring-worm generally appears on the head in a small circle of redness, which increases in diameter by degrees, and contracts a branny scurf, the hair separating at the roots from the slightest touch. After one circle has made its appearance, other similar circles may be ex-

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* ℞. Zinc. Vitriolat. ʒfs.
Cerus. Acetat. gr. xv.
Aq. Diſtillat. ℥vj. M.

pected soon to shew themselves, till they reach one to another, and at length occupy the whole of the scalp. Unless proper means are resorted to in time, glandular swellings will ensue, and sometimes ulcerations.

The treatment to be adopted should be to shave the head every four or five days; to bathe it twice or thrice a day with the lotion of vitriolated zinc; and to apply every night a little of the unguentum hydrargyri nitrati, washing this off again the next morning with soap-suds, and a bit of flannel. In inveterate cases, where glandular swellings or ulcerations attend, we may advise alteratives internally.

Of the PIMPLED FACE, or GUTTA ROSEA.

PIMPLES in the face frequently arise from hard drinking, but still many people who lead a life of temperance are troubled with them.

No danger, and but little uneasiness accompanies the complaint; but the patient is usually very solicitous to have it removed. For this purpose the metallic preparations are the most used. Solutions of the cerussa acetata are often employed with success, but a weak solution of muriated quicksilver appears to be more powerful.

The removal of these cutaneous inflammations, when they have become habitual, is however attended with danger, and not unfrequently with fatal consequences. Severe head-achs, loss of sight, epileptic fits, and paralytic attacks, have been known to ensue.

A remedy much employed by women who are troubled with eruptions in the face, is Gowland's lotion, the basis of which is generally supposed to be muriated quicksilver; but it is a hazardous application when continued for any length of time.

When pimples have become obstinate, the safest plan to pursue will be to avoid vinous and spirituous liquors; to keep the body open and regular by saline purgatives, and to enter on an alterative course of calomel joined with antimony. The arsenical solution is a remedy which has been found very efficacious in some cases of this complaint. The patient may begin with eight drops twice a day, and so gradually increase the dose to about twenty, or as long as no inconvenience is experienced.

If a solution of lead, or any preparation of mercury, is applied externally, an issue of two or three peas should be inserted between the shoulders.

Of the CHIGRE.

THE Chigre is a kind of small sand-flea which proves very troublesome in the West Indies, by insinuating itself into the soft and tender parts of the fingers and toes, more usually than into other parts of the body, particularly under the nails, where it continues to increase in size, causing no further pain than a disagreeable itching and heat. In process of time, however, a small bag or bladder is formed, in which are deposited thousands of nits or ova, that become so many young chigres, and, if not spee-

dily extracted, create running ulcers. Some people have lost their limbs by amputation, nay, even their lives, by having neglected to root out these vermin in proper time.

The moment therefore that an itching, redness, and heat more than usual are perceived in any part affected with a chigre, it will be advisable to extract it. This is usually done with a sharp-pointed needle, by some dexterous negro, who picks out the insect, and, if a cyst is formed, endeavours to take out this whole also; for by breaking it, troublesome ulcers are sometimes formed. The cavity is then usually filled up with tobacco-ashes or snuff.

In very inveterate cases, where, from neglect, either the hands or feet are much beset with chigres, it may be necessary, after the extraction of the several cysts, to wash the parts with a strong decoction of tobacco, or a solution of the vitriol of copper.

Of the CHILBLAIN, or PERNIO.

CHILBLAINS are painful inflammatory swellings, of a deep purple or leaden colour, to which the fingers, toes, heels, and other extreme parts of the body are subject, on being exposed to a severe degree of cold. The pain is not constant, but rather pungent and shooting at particular times, and an insupportable itching attends. In some instances, the skin remains entire, but in others it breaks, and discharges a thin fluid. When the degree of cold has been very great, or the application long continued, the parts affected are apt to mortify and slough off, leaving a foul ill-conditioned ulcer behind.

Children and old people are more liable to be troubled with chilblains than those of a middle age; and such as are of a scrofulous habit, are remarked to suffer severely from them.

The best mode of preventing these affections is to avoid with much care any exposure to wet or cold; wherefore those who are subject to them should be cautious, on the approach of winter, to cover the parts which are apt to be injured with woollen gloves and stockings, and not expose the hands or feet too precipitately, when cold, to a considerable degree of heat.

In common cases of chilblains, as soon as any part is perceived to be affected, it will be proper to rub it well with warm spirits of rosemary, to which a small addition of spirits of turpentine has been made; after which we may apply pieces of soft linen, moistened with camphorated spirits of wine or any of the embrocations here advised,* and they are to be kept on constantly.

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* ℞. Aluminis ʒij.
Aceti
Spirit. Vin. Ten. āā ℔fs. M.
Vel
℞. Aluminis ʒfs.
Aquæ Distillat. ℔j. M.

Vel
℞. Solutionis Sapon. cum Camphor.
Aq. Ammon. Acetat. āā ʒj.
— Ammon. Pur. ʒfs. M.

When the swellings break and discharge a thin matter, or ulcerate, poultices and emolient ointments may be applied for a few days; but as these are apt to induce fungous excrescences over the sores, which it will be difficult afterwards to remove, they should not be persisted in long. The occasional application of caustic to the edges, and dressing the sore daily with the unguentum hydrargyri nitrati, will effectually prevent any luxuriancy of granulation. Should this be found of too escharotic a nature, its strength may easily be reduced by a small addition of the unguentum sevi ceti.

DISEASES NOT REFERABLE TO ANY PARTICULAR CLASS.

Of WORMS, or VERMES.

THE human body is infested by three kinds of worms, viz. the ascarides, or small white worm; the teres, or round worm, and the tænia, or tape-worm, which is flat, consists of many joints, and is usually of a considerable length. The last is, however, more rarely met with in this country than the others; but in Germany and Switzerland the inhabitants are much troubled with it. Different situations of the intestines have been mentioned as being occupied by each kind, particularly the rectum as the seat of the ascarides, where they are observed always involved in mucus.

Unwholesome food, with a bad digestion, seems to be the principal cause of worms. They appear most frequently in those of a relaxed habit, and whose bowels contain a preternatural quantity of mucus, or slimy matter. Hence it is a disease most common to children; but they sometimes prevail in adults to a very high degree, particularly in those who live chiefly on a vegetable diet.

Worms may readily be distinguished by the following symptoms, viz. variable appetite, fetid breath, acid eructations and pains in the stomach, grinding of the teeth during sleep, picking of the nose, paleness of countenance, hardness and fulness of the belly, slimy stools, with occasional griping pains, more particularly about the navel, heat and itching about the anus, short dry cough, emaciation of the body, slow fever, with evening exacerbations, and irregular pulse, and sometimes convulsive fits.

It is often a very difficult matter to expel worms from the body, but more especially the tænia. When they prove fatal, it is by their erosion of particular parts, and their inducing a tabid state.

In the cure of this disease we must have in view, first, the effecting the destruction and discharge of the worms; and secondly, the preventing their future generation.

The first of these is to be accomplished by certain remedies, known by the name of vermifuges, which all act in one of the three following ways:

1st, By simple evacuation or purging, as mercury, rhubarb, and aloes; as also the different strong bitters, as rue, tansy, and worm-wood

2dly, Mechanically, as the pulvis stanni, cowhage, &c. or,

3dly, Chemically, as lime-water, which loosens their adhesion to the intestines, by dissolving the mucus in which they are involved.

We may begin with those which act mechanically,* and which have been found the most powerful; and after continuing them for two or three days, we may have recourse to those which have a purgative effect,† changing both after a continuance of some time, for those which act chemically.‡ Along with those which act mechanically, it will be proper to employ some kind of bitter infusion.§

With children who cannot be prevailed upon to take the cowhage either in the form of bolus or electuary, we may substitute that of lozenges, containing besides the efficient article a due proportion of sugar, Indian arrow-root, and gum tragacanth, to give them a proper consistence.

If these means prove ineffectual, we may then make use of the Indian pink root, or spigelia, which has on many occasions been found a very powerful medicine. About ten grains of the powder may be given morning and night to a child of eight or ten years old, to which age the doses of the preceding remedies are adapted. The spigelia is witnout doubt a poisonous and narcotic vegetable, and it is in all probability by virtue of this poisonous quality that it proves so beneficial in cases of worms.

By a proper use of stizolobium or cowhage (the dolichos pruriens of Linnæus,) with the oleum ricini after every third dose as a purgative,

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* ℞. Stanni Rasur.
Conferv. Abſinth. āā ʒſs.
Syr. Simpl. q. s. M.
ft. Electuarium, cujus ſumat ʒj. omn. mane, vel bis in die.

Vel

℞. Stanni Præparat. ʒſs.
Conferv. Rutæ ℈j.
Syr. Zingib. q. s. M.
ft. Bolus.

Vel

℞. Hydrargyr. cum Sulph. gr. viij.
Pulv. Stanni gr. xv. M.
ft. Pulvis.

Vel

℞. Stizolobii gr. iv.—viij.
Mel. Optim. vel Theriac. q. s. M.
ft. Bolus.

Vel

℞. Stizolobii ʒj.
Syrup. Simpl. q. s. M.
ft. Electuarium. Capiat Cochl. minimum mane primo per dies tres, et poſtea Olei Ricini ʒj.

† ℞. Calomel. gr. iij.
Pulv. Rhabarb. gr. x. M.

Vel

℞. Pulv. Jalapii gr. x.
Calomel. gr. iij. M.

Vel

℞. Olei Ricini ʒſs.—ʒj. pro dos.

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‡ ℞. Aq. Calcis ℔ſs. in die.

Vel

Pil. Saponis.

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§ ℞. Rad. Gentian.
Fol. Abſinth.
— Rutæ.
Cort. Limon. āā ʒij.
Aq. Ferventis ℔j.
Macera per horam unam, et cola.

we seldom however shall have occasion to seek relief from any other medicine, as in several hundred cases where I had used it during my practice in the West-Indies, I never knew it once to fail. It appears to have been but very lately introduced into this country, which, considering its wonderful vermifuge powers, is somewhat surprising. Certain lozenges, so much puffed off of late for their anthelmintic effect, consist principally, in my opinion, of cowhage and white sugar, combined with a considerable proportion of calomel.

A decoction of the Geoffræa inermis, or cabbage-bark, is another remedy much used in the West-Indies, but more particularly in Jamaica, for destroying worms, and often with a very happy effect.

For the destruction of ascarides it is very usual to throw up injections into the rectum that will prove obnoxious, and thereby dislodge them. Any of those recommended below* may be tried.

An injection of the down or hairy part of the stizolobium, mixed in a little thin gruel, might possibly have a very good effect. Dr. Darwin has proposed the introduction of a piece of candle up the rectum, well smeared with mercurial ointment, as a likely method to destroy ascarides.

A peculiar mode of employing tobacco in cases of worms has been recommended by Dr. Barton,† and which we are informed by him has in many instances produced very happy effects. The leaves are pounded with vinegar, and applied in the shape of a poultice to the region of the stomach or abdomen. "In consequence of this application, worms are often discharged," he mentions, "after powerful anthelmintics have in vain been administered internally." A similar practice I know is adopted in the West Indies, where it is usual to apply a cataplasm of the expressed juice of the aloe-tree to the abdominal region, for the purpose of dislodging worms, and I have observed that in many cases the remedy seemed to prove a powerful auxiliary. Its efficacy has extended however only to cases of the round worm.

The male fern, or filix mas, is a remedy which has been much extolled for its destructive powers to the tape-worm, which, of all others, proves the most difficult to expel from the body. The dose for an adult is from one to two drachms. After two doses, it will be right to give a purge of calomel and jalap, in about the proportion of five grains of the former to five-and-twenty of the latter.

† Reported in vol. viii. p. 428, of the Medical and Phyfical Journal.

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* ℞. Aq. Calc. tepid. ℥x. pro Enemate.

Vel

℞. Fol. Sabin.
—— Rutæ
—— Abfinth. āā ℥iij. Coq. ex Aq. Puræ ℔j. ad ℥x. Colat. adde
Ol. Ricini ℥fs. M.
ft. Enema.

Vel

℞. Aloes Hepatic. Pulv. ʒj.
Decoct. Avenæ ℥x. M.

Vel

℞. Fol. Nicotian. ʒfs.
Aq. Fervent. ℥x. Col.

The pomegranate root has also been found a very effectual remedy* for destroying this species of worm.

In the fifth volume of the Journal de Petersbourg, a new remedy has been proposed by M. Schmuker, and confirmed by M. Loeffler, for the destruction of the tænia. It is the seeds of the cevadilla,† half a drachm of which, in fine powder, he gives to the patient every morning fasting, mixed with honey, exhibiting on the fifth morning a drastic purgative. M. Schmuker affirms that this remedy never failed of giving relief in any case in which he tried it. When it excites considerable heat in the stomach, he mentions it will be best to give it in the form of pills.

Sulphureous waters, such as those of Harrowgate in this country, and of the islands of Jamaica and Nevis in the West Indies, have been found, when drunk upon the spot, to be very good anthelmintics.

Harrowgate water is a safe and powerful remedy against the round worm and ascarides, when taken in such a dose as to prove a brisk purgative; and in the latter case, when used likewise as a clyster, the ascarides being chiefly confined to the rectum, and therefore within the reach of this form of medicine.

Those who are afflicted with worms should abstain from all crude vegetables and unripe fruits, making their diet consist chiefly of animal food that is light, nutritive, and easy of digestion.

After a proper course of the vermifuge medicines which have been advised, we should employ such others as have a tendency to strengthen the stomach and intestines; in order to prevent any worms from being generated in future; a relaxation of these parts being a constant attendant on the disease. The most proper tonics are the Peruvian bark, astringent bitters, and chalybeates; various forms of which will be found under the head of Dyspepsia.

Of POISONS.

POISONS are of four kinds—mineral, vegetable, aërial, and animal. Mineral poisons are to be distinguished from vegetable ones by their action. The former corrode, stimulate, or inflame; the latter generally stupify, and leave no marks of inflammation. None of the mineral poisons terminate life, till after a most excruciating operation of two or three hours at least; whereas some of the vegetable class destroy in a few minutes. From the animal poisons the distinction is as striking; for although in the plague the mouth and throat are frequently affected in the same way, yet the local disease of the stomach is never present. The aërial poisons operate still more quickly than any of the other classes, and their action on respiration is so peculiar that it can never be mistaken.

* See Edinburgh Medical Journal for January 1807.

† Veratrum fabadilla. Hordeum cauſticum. c. b. Indian cauſtic barley:—The ſeed-veſſel of a Mexican plant, resembling in its form and ſtructure a barley-ear, but with ſmaller ſeeds, not above the ſize of linſeed.—Lewis.

Of the MINERAL POISONS.

THE chief of the mineral poisons are arsenic, muriated mercury, and lead.

Where arsenic has been administered, or taken perhaps in a mistake for some other medicine of a similar colour, a pricking and burning sensation will soon be experienced in the stomach, sudden and excruciating pains will be felt in the bowels, a severe vomiting will arise, the tongue, mouth, and throat will become rough and parched, and an unquenchable thirst will prevail, with much anxiety and restlessness. If the dose has been considerable, and proper antidotes have not been employed in time, an inflammation of the stomach and intestines will be the consequence, which will soon terminate in gangrene, giving rise to much distention of the abdomen, coldness of the extremities, fetid vomiting and stools, hiccups, and lastly, the death of the person.

A case reported in the 5th volume of the Medical and Physical Journal, p. 543, shews that arsenic as well as some other metallic poisons, may be taken into the system by the absorbents, and thereby produce very baneful effects on the constitution.

There are two theories entertained with respect to the mode in which arsenic operates: the one is, that its deleterious properties are owing to the action of its sharp spiculæ on the stomach; the other, that it has a peculiar action on the nervous system. Neither of these seems, however, to be true to the extent meant to be inculcated.

The effects produced by swallowing muriated mercury in a considerable dose are pretty similar to those occasioned by arsenic.

The effects of lead introduced into the stomach and bowels have already been noticed under the heads of Colica Pictonum and Palsy.

From poisons of all kinds more or less danger is always to be apprehended; but the degree will ever be in proportion to the quantity which has been swallowed, and to the time which has elapsed previous to any assistance being given.

In all cases of poison arising either from arsenic or muriated mercury, it will be necessary to procure as speedy and quick an evacuation upwards as possible, by means of a strong emetic;* drinking freely afterwards of diluting liquors, such as a decoction of barley, with gum arabic, mutton and veal broths, linseed-tea and milk, in order to sheathe the parts, and prevent their being acted upon by the particles of the poisonous matter.

With the same intention, oil is not only frequently administered by the mouth, but likewise thrown up into the intestines in the form of clyster, mixed with a decoction of emollient herbs.

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* R. Zinc. Vitriol. gr. xv.—ʒfs.
Pulv. Ipecac. gr. x. M.
ft. Pulvis ſtatim ſumendus.

Vel

R. Antimon. Tartariſat. gr. ij.
Zinc. Vitriolat. gr. x. M.
ft. Emet.

It appears, however, from numerous trials, that when arsenic is given to animals combined with oil, butter, or other fatty substances, they are destroyed much more quickly than when it is given in an aqueous vehicle. The use of fat bodies ought therefore to be interdicted during the first moments in cases of such a poison, and mucilaginous and gelatinous substances be employed in their stead.

Alkaline salts have been found to obviate the fatal effects of mineral poisons, and therefore in accidents of this nature, it will always be advisable to make use of them without loss of time. For this purpose, dissolve about an ounce of prepared kali in half a gallon of water, and give the patient a teacupful frequently.

Where none of these salts are at hand, then a small quantity of wood-ashes, mixed up with boiling water, so as to make it of a sufficient strength, may be substituted, suffering the liquor to stand until it settles, and then filtering it through linen for use.

Sulphurated kali is a remedy which will afford great relief in cases of poison both from arsenic and muriated mercury as well as alkaline salts. The patient may therefore take a drachm of it in a pint of warm water.

In cases where the poison of verdigris has been recently swallowed, emetics should first be given, and afterwards cold water, gently alkalized, ought to be drunk in abundance.

To obviate the deleterious effects of lead introduced into the stomach and bowels, the means which have been advised under the head of Colica Pictonum must be adopted.

The following are the tests by which arsenic may be discovered in the contents of the stomach, where it has been administered as a poison. First, if a few grains of it are thrown on a red-hot iron, a smell like garlic will be perceived. 2dly, If a few grains are placed between two plates of copper, and subjected to a red heat, the copper becomes whitened. 3dly, Where the quantity is sufficient, some wheat may be steeped in a solution of it, and which if given to chickens or small birds, will destroy them.

Another simple and efficacious mean for detecting the presence of arsenic is that of Bergman. It consists in infusing a portion of the suspected matter in a solution of vegetable alkali: after standing an hour or two, pour upon it a solution of the sulphat of copper. If any arsenic is present, the copper will be immediately converted into a beautiful green, and will soon be precipitated. In this way water, or the contents of a stomach supposed to contain arsenic, may be examined.

The precipitation of arsenic from any fluid in which it is dissolved, may also be made by an alkaline hydro-sulphuret; but on a review of the different processes for detecting the presence of arsenic, that of Bergman may be considered as the most delicate and decisive; and a very minute quantity, either in a fluid or solid state, may be detected by it.

These tests will enable the practitioner to form his opinion with tolerable accuracy, if called upon to appear before a court of judica-

ture ;* but those who may wish, under such a circumstance, to make themselves more fully acquainted with the processes for detecting arsenic, in cases of supposed poison, had better consult the Chemical Dictionary of Messrs. Aikins, and Murray's System of Chemistry.

When a person has, by mistake, swallowed a quantity either of sulphuric or nitrous acid, he should immediately drink freely of lukewarm water to weaken the causticity of the poison, and then he may take a solution of half an ounce of prepared kali or clean pearl-ashes in one pint of water, dividing it into six or eight draughts. Having neutralized the poison with the alkaline solution, or evacuated it by vomiting, we may then advise large draughts of cow's milk, should the sensation of a burning pain in the stomach and bowels not subside. Clysters of the same nature may be employed to sheath the intestinal canal.

Although not belonging to the class of poisons, it may be worthy of observation to notice here, that in cases of nails, or any other iron substance being accidentally swallowed and lodged in the stomach, nitric acid, diluted with water, will be found a powerful solvent.

Of VEGETABLE POISONS.

SOME species of fungi nearly resembling mushrooms, as well as hemlock, nightshade, foxglove, and other plants of the narcotic tribe, by being taken through mistake, often prove a source of poison. In the West Indies similar accidents frequently happen from using the cassavá in its crude state. In this state, it acts as a most deadly poison ; but by having its acrimonious juice carefully expressed, and being afterwards baked into thin cakes, it becomes a wholesome and nutritive kind of bread, much used in most of the islands, as also in Africa. Such is the wonderful effect produced by fire over this plant.

The symptoms occasioned by all poisonous substances of the vegetable class are, giddiness, confusion of sight, wildness of the eyes, palpitations, loss of memory and voice, stupor, nausea, vomiting, great distention of the stomach, universal twitchings and convulsions.

Under accidents of this nature we must attempt the immediate evacuation of the offending matter, or the counteracting its effects.

The first is to be obtained by powerful emetics of tartarised antimony, or vitriolated zinc and diluents, as recommended under the head of Mineral poisons, together with laxative clysters ; and

The second, by making the patient drink copiously of liquors highly acidulated with sulphuric acid, vinegar, or the juice of lemons or limes, which will be the best antidotes against whatever may remain undischarged in the stomach, and then rousing the system from a state of

* Some experiments made by Dr. Bostock of Liverpool, in consequence of the acquittal of a person tried for a supposed murder, and recorded in the seventeenth Number of the Edinburgh Journal, ought to have due influence in all judicial proceedings, where the question of poisoning is agitated. He found that an animal may be suddenly killed by receiving a metallic poison into the stomach, and yet that the nicest tests may not be able to detect any portion of the poison, after death, in the contents of the stomach.

torpor, by a blister applied between the shoulders, the application of sinapisms to the soles of the feet, and by keeping him in constant motion on his legs, if capable of standing, but if not, by frequently shaking and moving his body.

To obviate the fatal effects of opium, and other vegetable poisons of the like nature, where a large dose has been taken either through mistake, or with an intention of destroying life, it will be necessary to produce such a degree of irritation as will counteract its soporific quality. For this purpose, the patient should be rubbed constantly with salt in different parts; he should have an emetic of half a drachm, or even a whole one, of vitriolated zinc dissolved in about an ounce of water, given as soon as possible; and after it operates, the stomach ought to be well washed out with warm water or camomile-tea. He may then take sulphuric acid, lemon-juice, &c. together with wine or æther mixed up with cordial confection. To make him swallow, it will be necessary to lay him on his back, and then to put a small quantity of the liquid into his mouth, irritating at the same time his nostrils with a feather dipped in the liquor vol. cornu-cervi. The friction with salt and other external stimulants seems necessary, as the stomach is rendered so torpid by the opium, that but little effect can otherwise be produced by the exhibition of internal medicines.

To obviate the torpor of the stomach and stimulate the whole system, it would appear advisable to give considerable doses of ammonia. Indeed we are informed by a modern writer,* that he has observed where any of the narcotic poisons, particularly opium or hyoscyamus, has been swallowed, and an alarming stupor has continued for many hours, notwithstanding every effort made by the by-standers, a spoonful of a strong solution of ammonia has awakened the patient, and enabled him by words to express the benefit he has received from it; and by a repetition of the medicine, as the stupor returns, the sensibility and irritability have been gradually restored.

There can be no doubt but that strong stimuli will be necessary as soon as the effects of the one constituting the disease, are observed to be subsiding, and the system discovers marks of sinking. In this state we ought therefore, not only to employ frictions externally with salt, as has been directed, but we should give ammonia; with as much brandy as can be got down into the stomach, even by tea-spoonfuls at a time.

Of AERIAL POISONS.

THE external appearances of persons suffocated by the deleterious fumes arising from charcoal, various metals, such as copper, lead, antimony, mercury, &c. as well as in consequence of respiring or sleeping in unventilated apartments, caverns, and mines, are as follow: The head, face, and neck are swoln; the eyes are propelled from their sockets; the tongue is protruded at one side of the mouth; the jaws are firmly closed; the face is of a livid, and the lips are of a deep blue

* See Dr. Stone's Treatise on the Diseases of the Stomach.

colour; the abdomen is inflated; the body is insensible to pain, and the person appears to be in a profound sleep.

The first symptoms which the patient experiences on inhaling air vitiated with these deleterious fumes are, giddiness, headach, lethargy, fainting, convulsions, and general torpor.

Immediately on discovering a person who has been suffocated by any kind of deleterious fume, the windows and doors ought to be thrown open, and the body be undressed and exposed freely to cool air, being supported at the same time in a leaning posture on a chair: after a little time it must be covered with flannel or blankets; the face be sprinkled with vinegar, and the pit of the stomach with cold water. The legs may also be put into a cold bath; and as it is a well known fact, that the recovery of the dogs which are made the subjects of experiment in the Grotto del Cani, is much favoured by their being plunged into a neighbouring lake, possibly a sudden immersion of the whole body in cold water might be of service. After each application of vinegar and water, the skin ought to be rubbed with flannel, or a soft brush, the temples and inside of the nostrils be stimulated by applying volatile spirits, and bottles filled with warm water be laid to the soles of the feet, then leaving the person for a few minutes in an undisturbed state. Farther, clysters consisting of vinegar and water will be useful; and on the return of life, an inclination to vomit should be promoted by a feather dipped in oil, while gentle friction is to be continued, at intervals. The first symptoms indicating this happy change, will be, foaming at the mouth, and shivering of the whole body, especially after effusions of cold water.

Where the means which have been mentioned fail in re-animating the patient, it will be advisable to employ the united powers of electricity or galvanism; repeated shocks of either of which, particularly the latter, may be passed through the chest. Blood-letting, and the artificial introduction of air into the lungs by means of a pipe or bellows adapted for the purpose, are also to be tried. If these efforts prove successful, so that the patient seems again to breathe, he may then inhale oxygen gas. When he is able to swallow, the most proper drink will be vinegar and water, or some other acidulated liquor.

In Russia, the common people are frequently deprived of sensation, by vapours arising from the following cause: Persons of rank, in that country, have double windows to their houses in winter, but those of the poorer classes are only single. During frosty weather, an incrustation is formed on the inside of those windows, from a condensation of the breath, perspiration, &c. of a number of persons living together in the same room. This mephitic crust is mixed with the noxious fumes of candles, and of the stove with which the chamber is heated. When a thaw succeeds, and this plate of ice is converted into water, a deleterious principle is disengaged, which produces effects similar to those arising from the fumes of charcoal.

The method of recovering persons affected by this effluvium is as follows: They are to be immediately carried out of doors, and placed

on the snow, with no other covering but a shirt and linen drawers. Their temples and the region of the stomach are then to be well rubbed with snow, and cold water is to be poured down their throats. The friction is to be continued till the livid hue of the skin disappears, and the surface acquires its natural colour.

Of ANIMAL POISONS.

SEVERAL of these have already been mentioned, and their mode of operation noticed under the heads of Hydrophobia, Syphilis, Cancer, and Contagion. It only therefore remains to treat of the poison of venomous snakes, the viper, and some peculiar kinds of fish, the last of which in warm climates is frequently attended with fatal consequences.

In many parts of India, persons working in the fields are often bitten by venomous snakes; and as no puncture is to be observed, very frequently the poor fellows* are apt to attribute the uneasiness at first to the pricks of thorns, thistles, &c. A few minutes, however, never fail to exhibit the real state of the case; the unfortunate victim becoming sick, with cold sweats and stupor, and gradually sinking, perhaps occasionally convulsed, into the arms of death. Few, we are told, survive more than half an hour, and some die within a few minutes.

The symptoms which attend on the introduction of the poison of the rattlesnake into the blood are, nausea; a full, strong, agitated pulse; swelling of the whole body; eyes much suffused with blood; sometimes copious bloody sweats; and often hemorrhages from the eyes, nose, and ears. The teeth chatter, and the pains and groans of the sufferer indicate approaching dissolution.

The poison of this reptile is generally of a yellowish, somewhat greenish colour, which becomes darker in hot weather. During the coupling season, it is observed to be more active or virulent than at any other. So deadly are its effects, that it has been known to kill a dog in a few minutes.

When a person has been wounded by a venomous snake, the first step to be adopted is, to pass a tight ligature above the injured part (where capable of such an application,) so as to prevent the further absorption of the virus into the system, and then to evacuate that which has already been admitted by sucking the wound, as practised by the Creek Indians with impunity, and by afterwards promoting discharges of blood and serum from it by means of scarifications, cupping, excision, or the application of caustic.

Soap-lees, volatile alkali, and the spiritus ammoniæ succinatus, and eau de luce, have all been found excellent applications to wounds inflicted by the rattle and other venomous snakes, provided they have been used immediately after the accident. The last remedy is likewise used internally in the East-Indies, in the proportion of a tea-spoonful

* See Oriental Field Sports.

to a wine-glassful of water, and by being repeated a few times is said to be attended with a happy effect. The fresh juice of the rattlesnake-plantain applied to a wound of this nature, is said to be a powerful antidote against the poison of this reptile.

We are told by Captain Carver, in his Travels through North America, that so convinced are the Indians of the power of this antidote, that for a trifling bribe of spirituous liquor they will at any time permit a rattlesnake to drive his fangs into their flesh. He likewise speaks of salt as an effectual remedy against the bite of this reptile, provided it is applied immediately to the wound in a strong solution.

When through neglect the venom has been absorbed, all that can be done is to excite a strong perspiration, by means of emetics and powerful sudorifics. This, we are informed by Dr. Barton,† is effected in a violent degree by the juice of the garden-rue, which the Indians in Jersey give in the dose of two table-spoonfuls every two hours.

Where this is not to be obtained, or ready at hand, we may advise large doses of Venice treacle, with volatile aromatic spirit, and vitriolic æther, which may be frequently repeated, the patient drinking a little warm rum and water after each.

The use of oil, as a remedy for the bite of serpents, was long ago recommended in the Philosophical Transactions of the Royal Society of London; but from subsequent experience it seems to have received no sanction. Of late, however, its efficacy has been asserted, in cases of the bite of the rattlesnake, by Mr. J. Miller, of Pendleton county, North America. He observes, that in a great number of instances, olive-oil, taken inwardly, in the quantity of a few spoonfuls, and applied also to the bitten part, has proved itself fully adequate to the worst of cases, if timely exhibited.

In bites of other venomous serpents, the same mode of treatment must be adopted as has just been advised. The aristolochia, or snake-wood, taken inwardly in the form of infusion, and applied externally in that of poultice, is much used by the negroes against venomous bites; as is also a species of grass called chicken-foot, which is commonly mixed up by them with a little salt and spirits, so as to make a cataplasm of a proper consistence.

Dr. Bancroft mentions, in his History of Guiana, that the general remedy for the bites of poisonous animals is a cataplasm of the pulp of lemons mixed up with sea-salt, and applied to the wounded part; and this he has frequently found of use, when previous scarification had been employed.

In the sixth volume of the Asiatic Researches there is a communication on the poison of serpents by W. Boag, Esq.; and after having taken an extensive view of the ancient methods of effecting that cure, all shaded with doubt and suspicion, he ultimately recommends, as a specific in this dreadful malady, the lunar caustic; a remedy long ago proposed by Fontana, who mixed the venom with this caustic, and found

† See Tranfactions of the American Philofophical Society, held at Philadelphia vol. iii.

that it was thereby rendered entirely innocent. Mr. Boag supposes that the poison of serpents acts upon the blood, by subtracting the oxygen, which it receives from the atmosphere in its passage through the lungs, and upon which its vitality depends.

In the second volume of the same work, page 323, we are favoured with an account, by J. Williams, Esq. of the surprising efficacy of a remedy against the deleterious effects of the bite of several snakes, and especially of the cobra de capello. It consists in the external application to the bitten part, and likewise internal exhibition of the spirit of the caustic volatile alkali, or aqua ammoniæ puræ. We are told that the remedy has been found to put a sudden stop to the baneful effects of the poison of this reptile, and possibly that it may have a similar power in the bites of the rattlesnake, viper, &c. In the bite of a rabid animal, when the patient will not consent to have the wounded part excised, or even after it is cut out, this remedy might be tried.

The poisonous serpents are for the most part distinguished by two or more canine teeth or fangs in the upper jaw, which, in the living animal, when held properly by the neck, or irritated, are readily enough discerned; though not always so easily in a recumbent state, or in the dead subject. But the want of a row of teeth in the upper jaw, found in that of all harmless serpents, serves also as a criterion, even where the fangs have purposely been eradicated, or lost by accident. In serpents not venomous, there are three rows of common teeth in the upper jaw: in the poisonous kinds, the external row is wanting.*

The symptoms which attend on a bite of the viper are, acute pain in the wounded part, together with a considerable degree of swelling, that is at first red, but which afterwards becomes livid, and diffuses itself over the neighbouring parts. After a short time the constitutional symptoms make their appearance; the person becomes faint, the pulse is small and intermitting, nausea and vomiting ensue, the skin has a yellow tinge, and death not unfrequently is the consequence.

The treatment to be adopted in a case of this nature, must be pretty similar to that which has been advised for the bite of the rattlesnake, viz. preventing the absorption of the matter into the system, by means of a ligature above the part, and destroying the virulence of that which has been introduced into the wound, by scarifications, cupping, excision, caustic, or the application of soap-lees, salt of tartar, volatile alkali, or the spiritus ammoniæ succinatus; employing strong diaphoretics internally at the same time, in order to determine to the surface.

As an external application, a poultice of quick-lime with oil and honey, has been recommended, as has likewise a cataplasm of garlic. This last has also been given internally with advantage.

The bite of the snake or adder of this country is attended with symptoms of a similar nature, but they are not so violent, neither does it often prove fatal. Much the same treatment is to be adopted as in the former cases.

Europeans, on their first going out to the West Indies, and other

* See Dr. Russel's Account of Indian Serpents.

tropical situations, usually suffer very much from the bite of musquittos. They are a species of gnat, and on whatever part these pitch, they immediately produce small tumours, which are attended with so high a degree of itching and inflammation, that the person cannot refrain from scratching, by a frequent repetition of which he not uncommonly occasions them to ulcerate, particularly if he is of a robust and full habit.

To allay the itching and inflammation, the parts may be bathed frequently with a solution of opium in water, or with the aqua lithargyri acetati, sufficiently diluted. Volatile alkali is likewise a good application. It will at the same time be necessary to make use of some cooling laxative, and a spare diet.

Where pustules arise on the parts that have been bitten, opening them with a lancet about the third day, and letting out the watery matter, will be proper.

Those who suffer much from the bite of these insects, should wear gloves and long linen trowsers by day, in order to defend the extremities from their attacks; and by night, they should sleep under the cover of a net, which being usually made of thin lawn or gauze, is perfectly cool, and effectually shuts them out.

The topical applications for the bites of scorpions, centipedes, spiders, and wasps, are the same as advised for those of musquittos. Olive oil is, however, much made use of also as an external application.

In this country some kinds of fish, such as eels, salmon, herrings, and, in peculiar constitutions, muscles, lampreys, and even lobsters, independently of their putrescency, give a singular irritation to the system, and during their digestion in the stomach, occasion a considerable efflorescence on the skin, sometimes partial, and at other times over the whole body; sometimes with a considerable febrile disorder, and at other times with very little. In warm climates we however meet very frequently with fish possessed of the most deleterious quality. The barricuda (perca major,) king-fish (xiphias,) cavallee (scamber,) rock-fish (perca marina,) smooth bottle-fish (ostracion glabellum,) and yellow-bill sprat, are the fish most to be dreaded. The latter possesses a poisonous virus to an extent almost incredible, and has in several instances been known to destroy life in the space of half an hour, by exciting dreadful convulsions. The conger eel, as likewise the large white land-crabs that feed on the leaves of the manchineel-tree, are also frequently poisonous, and productive of violent cholera.

The cause of this deleterious quality in fish has given rise to various conjectures. Some are inclined to think there are two distinct varieties of the same fish; others impute it to copperas-banks, on or near which the fish feed; and others again think that it proceeds from their particular food, which, although not hurtful to them, tinctures them nevertheless with a poison deadly to many other creatures. Of all these conclusions the last seems to be the best grounded, as it is an indisputable fact attested in innumerable instances, that when the fish is removed off the hook, if the precaution is taken to gut it immediately and salt it, it seldom or never creates any disorder, or at most only in a very slight degree, even if

of ever so poisonous a nature. Except in the sprat and cavallee, no two distinct varieties of the same fish are to be observed; and with respect to copperas-banks in the West Indies, their existence is a mere supposition, never having been satisfactorily ascertained. Even if the fact was fully established, still it is well known that this substance, or a solution of it, is inevitably fatal to all fish.

The circumstance of the alimentary tube being more poisonous than any other part of the fish, is certainly a strong confirmation that its deleterious quality is owing to the food; the muscular parts being only slightly tinctured by the chyle and blood conveyed to them, while the greater part of the poison remains in the guts. I think we may rest well assured that the poison lies in the intestinal tube, is assimilated with its food, and circulates without any detriment to the fish; and moreover, that the longer the fish remains out of water, the more violent the poison becomes; but what really forms the basis of the poison has never been yet accurately ascertained. It is indeed a curious circumstance, that the same fish which is perfectly innocuous at one period, may and often is highly pernicious at another.

Certain and rapid death is almost sure to ensue from eating the yellow-bill sprat; but from a use of most other kinds of poisonous fish, the person is seized after a few hours with languor, heaviness, and faintness, succeeded by great restlessness, flushings in the face, giddiness in the head, cardialgia, nausea, griping pains in the bowels, and a severe vomiting and purging. The burning which was felt at first only in the face and eyes, is at length extended over the whole body, but more particularly the palms of the hands and soles of the feet, and is often succeeded by an eruption or efflorescence, rising up in large bumps similar to bug-bites, or the nettle-spring. The pulse is usually hard and frequent at first, but it soon becomes low and feeble. With the ardor of the skin, there is invariably a prickly sensation in the hands when immersed in cold water, which particular symptom may always enable us to decide with confidence on the real nature of the disease.

In some cases the neck of the bladder, urethra, and sphincter ani are likewise affected with ardor, and the patient experiences a difficulty of making water, together with a considerable degree of tenesmus.

Some navigators, whose crews were much affected by eating fish of a poisonous nature, have informed us that a swelling of the salivary glands, accompanied by a profuse spitting, was a symptom which very frequently attended. In the few cases which fell under my care during my residence in the West Indies, no such symptom ever was apparent. In the advanced stage of the disease, I observed that the whole surface of the body acquired a deep yellow hue as in jaundice, and that the urine was likewise highly tinged of the same colour. Even the perspiration gave a deep yellow tinge to the patient's linen. These appearances took place in a very high degree in one or two cases, but more particularly so in my own, as I was so unfortunate as once to experience the deleterious effects of a poisonous rock-fish.

Where a large quantity of the poison has been taken, or it has been

of so deadly a nature as to prove fatal, the patient generally goes off in strong convulsions; but where the quantity and nature of the poison have not been so powerful as to occasion death, and the violence of the disorder suffers some abatement, the body becomes emaciated, the cuticle peels off in various parts, but more particularly in the palms of the hands and soles of the feet; the hair drops, and acute shooting pains in the articulations of the wrists, knees, and ankles, and sometimes in the cylindrical bones, are felt for a considerable length of time. From the great debility which is induced, it not unfrequently happens that œdematous swellings of the lower extremities ensue.

The poison of fish is always attended with much immediate danger; and even when the person does escape its deadly consequence, his constitution not uncommonly receives so severe a shock, that, in order to restore its wonted vigour, he will find it necessary to visit a cold climate. The necessity of this step I wofully experienced, and some years elasped before the desired end was obtained.

The intentions of cure in affections of this nature, are, first, to procure a discharge of the poison as quickly as possible; and, secondly, to counteract or alleviate the effects that arise from it.

The first of these intentions is to be answered by giving a smart emetic of tartarised antimony or vitriolated zinc, together with copious draughts of diluent liquors, as advised under the head of Mineral Poisons. Where the person is of a full plethoric habit and capable of bearing evacuation, it may also be advisable, after the operation of the vomit, to give some proper purgative, as the oleum ricini, which, as oil is found highly useful of itself in many kinds of poisons, may be attended with a double effect. Where there is great irritation of the stomach without much purging, we may substitute calomel,* which, from the smallness of its bulk, may be more likely to be retained.

To answer the second intention, we must employ such remedies as have been found to possess a power of counteracting the poison in some degree. Spirituous liquors and other strong cordials, such as Madeira wine, but more particularly the former, have long been supposed to have a considerable power of obviating the deleterious effects of poisonous fish. The conclusion is, I think, well grounded, as it has been observed in most cases, that those who have taken a quantity of rum or brandy after eating fish of this nature, have suffered considerably less than those who neglected that precaution.

Dr. Clarke of Dominica, in a letter to Dr. Simmons of London,† observes that capsicum (Cayenne pepper) has long ago been known to possess the power of counteracting the poisonous effects of fish. If

† See vol. vii. of Medical Facts and Obfervations, p. 289.

* ℞. Calomel. gr. vj.—xij.
Extract. Colocynth. C. gr. x.
Opii gr. j.
Syrup. Simp. q. s. M.
ft. Bolus.

this was really a fact, we should seldom or never hear of any accident of this nature, as the negroes use a considerable quantity of the fresh capsicum with every article whatever of their food. It is probable however that it may be employed with alcohol and other stimulants with some advantage.

An infusion of the sensitive plant has been mentioned as a remedy from which some benefit may be derived in cases of fish poison. I have made trial of it, but cannot report any thing in its favour.

Besides employing stimulants internally to counteract the effects of the poison, we should attend to the symptoms which are most urgent. If the vomiting and purging continue, although proper evacuations have been premised (which frequently happens,) we must then have recourse to opiates administered by the mouth, as advised under the head of Cholera Morbus, and exhibited in clysters along with mutton-broth, or a solution of starch. Considerable doses of opium will be necessary likewise, where the patient becomes convulsed, and they will require to be frequently repeated.

To allay the heat and dryness of the skin, and determine to the surface of the body, it will be proper, after the irritation of the stomach has ceased, to give small doses of the pulvis ipecac. compos. pulvis antimonialis, or pulvis Jacob. vera, as recommended under the head of Simple Fever, together with a free use of diluent liquors. Where any degree of strangury is present, these last will more immediately be necessary.

Under the supposition that the poisonous quality of the fish before noticed, is occasioned by their feeding on the moss which grows on coppe-ras-banks, a late writer on the subject* tells us, that in the treatment of such cases during his residence in the West Indies, his object was to decompose the poison; to effect which, he almost entirely depended on alkalines in simple solution with water. He never tried, however, the volatile alkali, although he thinks there can be little doubt of its efficacy in counteracting the poison of fish, whatever the basis of it may be.

The pains in the joints are sometimes very obstinate, and yield only to a considerable lapse of time. Covering the parts with flannel, together with the frequent use of a tepid bath, and drinking mustard whey, or a decoction of guaiacum or mezereon, will be the most likely means to afford relief.

To obviate the debility which arises in consequence of the disease, and restore vigour to the system, the patient must enter on a course of tonics, as recommended under the head of Dyspepsia; and where these do not prove sufficiently efficacious, he should remove without further loss of time to a cold climate.

As fish forms a great part of the diet of the inhabitants of the West Indies, and is daily served up at most tables, it may be of some importance to be able to distinguish those of a poisonous nature, from such

* See Dr. Chisholm's Communication, No. 16, of the Edinburgh Medical Journal.

as are wholesome. The surest criterion to judge by is to give the entrails to a dog, cat, or duck, and if after an hour or two no disorder arises, the fish may be eaten with safety. Another method much practised, however, is to put a silver spoon for some time into the water in which the fish is boiling, and if upon taking out the spoon, it appears unsullied, the fish is supposed to be safe; but if the colour be at all changed, it is then judged unwholesome. This test should never be depended upon.

From the observations of fishermen, it appears that fish which have no scales are most apt to prove poisonous. Those of uncommon magnitude are regarded by them as highly suspicious.

To obviate the poisonous effects of muscles, lobsters, oysters, eels, &c. a smart emetic should be administered as quickly as possible, and then the patient may take the acetous acid, and likewise milk.

Of SUSPENDED ANIMATION.

In consequence of drowning, and also of suffocation and strangulation, a considerable check is often given to the principle of life, without wholly extinguishing it. When it happens from the first of these causes, the circulation becomes gradually more feeble and slow, and much anxiety is felt about the præcordia; to relieve which, the person attempts to rise to the surface of the water; he then discharges a quantity of air from the lungs, in the place of which water is received. After struggling in this manner for some short time, convulsive spasms arise, the organs of respiration cease to act, and he at last expires; soon after which the skin becomes of a purple or blue cast, particularly about the face and neck, and the body sinks.

When a person dies from suffocation, the symptoms are nearly the same as in apoplexy.

The phenomena which attend on strangulation are, convulsive paroxysms superadded to the apoplectic symptoms.

Livid and dark brown spots on the face, with great rigidity and coldness of the body, a glassy appearance of the eyes, and a flaccid state of the skin, denote a perfect extinction of life; but the only certain sign is actual putrefaction; and therefore, in every case where this symptom is not present, and where we are unacquainted with the length of time the body may have been under water, every possible mean should be employed for restoring it to life immediately upon its being found, as the noble machine may be stopped, and the spring nevertheless still retain in some degree its elastic vigour.

Dissections of those who have died by drowning shew that an accumulation of blood in the venous system forms the great morbid change which takes place in accidents of this nature. The lungs are in a state of collapse, and the accumulation of blood is confined to the vena cava, the heart, and the parts of the venous system. In some cases the stomach is found to contain a quantity of water; in others, none is to be perceived. In all instances, the external surface of the brain appears of a highly flo-

rid colour, without any great distention of vessels or marks of effusion. It has been supposed, however, by many, that persons who die by drowning suffer from the intervention of apoplexy. After a recovery from apoplexy, the person is generally paralytic, whereas no such event follows the recovery from a suspension of life by drowning. In both hanging and drowning, the proximate cause appears to be the stoppage of air to the lungs.

The appearances exhibited on dissection, in cases of strangulation and suffocation, are pretty similar to those in drowning, except the absence of water in the lungs and stomach; and that in these instances there is always a greater turgescence in the vessels of the pia mater.

The following are the means to be employed for the recovery of persons recently drowned.

As soon as the body is taken out of the water, it is to be conveyed with as little tossing and agitation as possible, to the nearest house, where it is quickly to be stripped of the wet clothes; to be wiped perfectly dry; and then to be laid between warm blankets, and on the right side in preference to the left, in order that the passage of the blood from the heart may be favoured by the position. The head is at the same time to be covered with a woollen cap, and bags filled with warm sand, or bricks heated and wrapped in flannel, are to be applied to the feet. The doors and windows of the apartment are to be thrown open, in order that the cool air may be freely admitted, and no persons but such as are necessary in the operation, should be allowed to enter it.

Having taken these steps we should next endeavour to expand the lungs, and make them, if possible, reassume their office. When not furnished with the proper bellows invented by Mr. Hunter for this express purpose, which is of such a construction, that by one action fresh air is thrown into the lungs, and by another it is thrown out again, so as to imitate or produce artificial breathing, we must be content with blowing in air by means of a common pair; or by inserting a pipe into one nostril, compressing the other, shutting the person's mouth at the same time, and then blowing through the pipe with a considerable degree of force. By any of these means we may be able to inflate the lungs.

The lungs being inflated, we should then rub every part of the body with salt and warm flannel cloths, increasing the degree of heat gradually as the symptoms of re-animation seem to return. Should the frictions not be attended with any effect, we ought to apply flannel cloths wrung out in very hot water over the heart and thorax, or we may put the person into a warm bath. A high degree of heat will not be necessary; a moderate degree will be sufficient.

Together with these means, it is customary to stimulate the brain by applying volatile salts to the nose, and by rubbing the temples with spirits of hartshorn. In these cases, it is likewise usual to irritate the stomach and intestines; the former, by means of emetics introduced into the organ through a flexible tube, and the latter by means of injections, but more particularly those of tobacco-smoke. The propriety

of this remedy has however been disputed by many practitioners, on account of its sedative powers, and with great propriety ; for, instead of being likely to answer our wishes, it must assuredly prove highly injurious and assist in depressing the vital principle.

With respect to emetics, their use should be confined solely to those cases where a very evident fulness of the stomach is to be observed externally, from its being loaded either with water or food, or both.

Electricity is sometimes had recourse to in order to promote a restoration of life ; unless employed by insulation alone, it will however be more likely to do harm than good.

From some late experiments made by Professor Aldani of the university of Bologna, on the body of a malefactor who was executed for murder in London, it would appear that galvanism, as an auxiliary, promises great advantages to the interests of humanity in cases of apparent death by drowning, and others, of asphyxia. Before dissection the corpse was made to exhibit very powerful muscular contractions, and these continued for upwards of seven hours. On the first application of galvanism to the face, the jaw of the deceased criminal began to quiver, and the adjoining muscles were horribly contorted, and one eye was actually opened. In the subsequent part of the process, the right hand was raised and clenched, and the legs and thighs were set in motion. We are further told that it appeared to the uninformed part of the by-standers, as if the wretched man was about to be restored to life.

The mode recommended by M. Aldani for the employment of galvanism, as a mean of restoring suspended animation, is as follows. He immerses the hand in a solution of muriate of soda, and establishes an arc, one of the extremities of which is made to pass round the forearm, while the other is brought in contact with the bottom of the pile. He adapts to the extremity of another arc an elastic probe, which is applied to one of the ears, moistened by means of a syringe with the same solution, and connects the other extremity of the arc with the summit of the pile.

Bleeding is a remedy which is often employed in cases of a suspension of the vital powers from drowning ; but the natural heat should always be somewhat restored to the body, by a pursuance of the means which have been recommended, before we attempt to open a vein. Where stupor, head-ach, &c. remain after the person has come to himself, it certainly will be advisable to draw off some blood, and possibly the best way of doing it, will be by the application of leeches to the temples ; but where these symptoms do not prevail, bleeding in any manner will be more likely to do harm than good. In cases of strangulation and suffocation, where there are evident marks of turgescence in the brain, the operation may afford much benefit.

The means which have been advised are diligently to be persevered in for a considerable time, and the case by no means to be given up as irretrievably lost, until at least after the expiration of four or five hours trial, as recoveries have been effected to this extent.

On the smallest appearance of respiration or restoration of the prin-

ciple of life, wine or medicines of a warm cordial nature, such as a little warm brandy and water, are to be conveyed into the stomach, in small quantities at a time, and to be frequently repeated. When the patient comes perfectly to himself, he is to be kept very quiet, and to be allowed every benefit from repose.

With regard to the method of treatment to be adopted in cases of general torpor from cold, the same caution and reserve in the application of heat do not appear to be so necessary as in those of benumbed or frost-bitten limbs (see below.) In the former, the principal indications to be kept in view are to communicate heat, and to excite the respiration and circulation. The patient may be safely brought into a warm room, provided it be, at the same time, well ventilated. He should be immediately chafed with warm flannels over the whole body, but more particularly the trunk ; his nostrils, temples, and epigastric region should be rubbed from time to time with ammonia, and his lungs be inflated. As soon as he has so far recovered as to be able to swallow, it will doubtless be proper to give him some warm and gently stimulating drink, by spoonfuls at a time.

While the body is cold, and the circulation and respiration are languid, I think blood-letting would be improper. If however, after these functions and the natural temperature are restored, the patient should remain any time in a comatose state, with a strong full pulse, the propriety and necessity of venesection can hardly be doubted.

Before I close this subject, I think it proper to observe, that in all cases of drowning, as well as in every other instance where death appears to be the consequence of apoplexy, syncope, lethargy, hysteria, or asphyxia, &c. we should be cautious in not allowing the body to be interred until evident signs of decomposition or putrefaction are apparent ; as the suspension of respiration, rigidity of the limbs, abolition of sensation and motion, the want of pulsation in the heart and arteries, coldness of the body, and the collapse, opacity, and want of lustre in the eyes, are but equivocal symptoms of death, and ought not therefore to be relied on alone.

FROST-BITTEN.

If a person has exposed his hands and feet to a very severe cold, the excitability of these parts will be so much accumulated, that if they are brought suddenly near a fire, a violent inflammation and even a mortification may take place, which has indeed often happened ; or at any rate that inflammation called chilblain will be produced, from the violent action of the heat upon those parts ; but if a person so circumstanced were to put his hands and feet into cold water, very little warmer than the atmosphere to which he had been exposed, or rub them with snow, which is not often colder than 33 degrees, the morbid excitability will gradually be exhausted, and no bad consequences will ensue. When the hands, feet, nose, or any other part of the body have therefore been exposed to violent cold, so as to be frost-bitten, they ought at first

either to be well rubbed with snow, or be put into cold water, and afterwards be subjected to warmth in the most gentle and gradual manner.

Of the DISEASES of PREGNANCY.

THREE different stages evidently exist during a state of pregnancy, each of which has a distinct set of symptoms; and when we reflect on the alteration which the constitution suffers in consequence of impregnation, and the vast distention and dislodgment of the uterus which prevail at a more advanced period, we cannot be surprised at the many complaints and irregularities which then arise.

The first stage of pregnancy is usually accompanied with a suppression of the menses, together with frequent nausea and vomiting, heartburn, indigestion, peculiar longings, head-ach, giddiness, tooth-ach, and sometimes a slight cough; the breasts become enlarged, shooting pains extend through them, and the circle round the nipple alters to a dark brown colour. There often occurs likewise a feverish disposition, with debility, emaciation, irritability, and peevishness of temper, and a total alteration of the countenance, every feature of which becomes much sharpened. Some women breed so easily as to experience hardly any kind of inconvenience whatever; whilst others again are perfectly incapable of retaining the least thing on their stomach, and are thereby reduced to a state of extreme weakness.

With some women, the vomiting will continue during the whole or greater part of the second stage of pregnancy, as well as the first; but this does not usually happen. Partial suppressions of urine, with a frequent inclination to void it; itching about the external parts of generation, costiveness, tenesmus, and the piles, are what they are chiefly incommoded by during this period. Most women quicken about the sixteenth week after conception, at which time the mother becomes sensible of the slight efforts of the child; and besides the complaints just enumerated, she will then be liable to sudden faintings, and slight hysteric affections.

During the three last months, or third stage of pregnancy, general uneasiness, restlessness (particularly by night,) costiveness, œdematous swellings of the feet, ankles, and private parts, cramps in the legs and thighs, difficulty of retaining the urine for any length of time, varicose swellings of the veins of the belly and lower extremities, and the piles, are the affections which usually prove most troublesome. In weak delicate women of irritable habits, convulsive fits sometimes arise, which are ever to be regarded in a dangerous light.

Nausea and Vomiting.—It has been observed, that frequent nausea and vomiting are apt to prove somewhat troublesome to pregnant women, and in many cases to reduce them to a state of very great debility. As these most frequently arise immediately upon first getting out of bed in the morning, the patient should be recommended, under such circumstances, never to rise until she has taken either a dish of

tea, coffee, or whatever else she has usually accustomed herself to for breakfast.

If the vomiting should become at any time so severe as to threaten the bringing on a miscarriage, from the violence of straining, it may then be advisable to direct two or three table-spoonfuls of the saline medicine to be taken every now and then, in such a manner as that the effervescence shall ensue after it is swallowed; besides which, the patient's body should be kept open with some gentle laxative. If these means do not succeed, we may order about six ounces of blood to be drawn from the arm, and which, if necessary, may be repeated in a week's time. The sickness, in such cases, depends on irritation, and is only to be removed with certainty by bleeding.

Local applications have been recommended to abate excessive vomiting. As such, a piece of folded linen cloth, moistened with tinctura opii, may be kept constantly applied to the region of the stomach. Probably a small addition of vitriolic æther might increase its good effect. It sometimes happens that vomiting is incessant for many days together, accompanied with great prostration of strength and constant thirst, and at the same time an utter impossibility of retaining any thing on the stomach. In this state the application of leeches to the pit of it, and a constant attention to suffer nothing to be swallowed that can irritate, allowing the patient only asses milk, and that by single spoonfuls, have been found to afford relief. If a considerable degree of nausea prevails, without the ability of throwing up, fourteen or fifteen grains of pulv. ipecac. may then be given, experience having proved that gentle emetics may be administered with perfect safety to pregnant women.

Head-ach with Plethora.—When either head-ach, drowsiness, or a sense of fulness in the vessels, proves troublesome, drawing off a few ounces of blood from the arm in robust women, will most likely be attended with advantage. In those of a weak irritable habit, the application of a leech or two to each temple will be more advisable than bleeding from the system where the head-ach proves obstinate and resists the other means we have employed. The bowels are at the same time to be kept in a proper state by some gentle aperient.

Tooth ach.—For the alleviation of the tooth-ach, the external as well as internal application of a few drops of cloves, cajeput, juniper, or any other essential oil, will often prove effectual.

Heart-burn.—If the patient is incommoded by heart-burn (which usually proceeds from an acidity in the stomach,) half a drachm of magnesia may be taken morning and evening, to obviate it; and if this fails, we may then have recourse to the absorbent mixture advised below,* which Dr. Sims informs us† he has found the most efficacious

† See Medical and Physical Journal, No. viii. p. 206.

* ℞. Magnes. Ustæ ʒj.
Aq. Puræ ℥vss.
Spirit. cinnam. ʒiij.
Aq. Ammon. Pur. ʒj. M.
Fiat Mistura, cujus sumat Cochl. larg. j. vel ij. pro re natâ.

of all remedies for the removal of this distressing symptom in pregnant women.

Longings.—When peculiar longings arise in a state of pregnancy, they should always be gratified, if possible, as women are apt to miscarry from the anxiety these occasion, when not indulged in them: but that the child in utero can be marked by any depraved appetite of the mother, or be mutilated by any disagreeable object being presented to her, cannot be admitted.

Hysteria.—Should any hysterical affection or sudden fainting, arise, little more will be necessary than to expose the patient to a free open air, to place her in a horizontal position; and to give her a glass of cold water with a few drops of the liquor volat. cornu cervi, or a little wine sufficiently diluted.

Costiveness, Piles, &c.—Costiveness, partial suppressions of urine, and the piles, which attend on the second stage of pregnancy, are occasioned by the great pressure of the uterus on the rectum and bladder. The first and last of these symptoms are to be obviated by a daily use of some gentle laxative, such as a solution of manna, or the electuary advised below.* Pills composed principally of aloes (such as Anderson's,) are too generally used by pregnant women for this purpose; but they are highly improper, as being of too stimulating a nature, and very apt to occasion hemorrhages and the piles. In troublesome piles which are externally seated, the best application is leeches, and the irritation may afterwards be lessened by preparations of cerussa acetata. Ten grains of this dissolved in four ounces of rose-water, forms a good lotion, with which the parts may be washed frequently. If necessary, a little of the vinous tincture of opium may be added.

Suppression of Urine.—When a suppression of urine takes place, besides making use of emollient fomentations, clysters, and gentle purgative medicines, such as the oleum ricini, the patient drinking plentifully at the same time of diluent liquors, it will be necessary to have recourse to chirurgical assistance, by drawing it off by means of a catheter morning and evening.

Diarrhœa.—If diarrhœa arises in a pregnant woman, it should be treated just as at any other time, and after the stomach and intestines are cleared, astringents may be used, if there is no great degree of fever. If fever is present, that must be attended to chiefly, and be first removed.

Retroverted Uterus.—It sometimes happens that a retroversion of the uterus ensues, in which case it becomes misplaced downwards and backwards, because the os uteri is tied forwards to the meatus urinarius, and there is no communication behind by which it is held to the

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* ℞. Elect. e Senna ℥ij.
Cryst. Tartar. ℥ij.
Pulv. Jalap. ℥ß.
Syrup. Rosæ q. s. M.
ft. Electuarium, cujus sumat ægra mol. nuc. moschatæ horâ somni vel pro re natâ.

rectum ; but anteriorly, it is connected with the neck of the bladder, by close cellular substance ; therefore whatever raises the bladder will raise the cervix uteri, and what raises this must, at the same time, depress the fundus : so that in a retroversion of the uterus, the urethra is drawn up close behind the symphysis pubis, and in the case now under consideration, the bladder rises, and draws up the os uteri with it.

The only period of pregnancy at which a retroversion of the uterus is apt to arise, is between the end of the third and fourth months ; for in the early months of pregnancy, the uterus in length from the fundus to the cervix, is not so great as to fill the space between the sacrum and the neck of the bladder, and cannot for that reason produce suppression. This applies to all situations of the uterus in unimpregnated women, and women who are with child, till the close of the fourth month of pregnancy ; after which, the uterus cannot be made to go down into the pelvis. When the uterus has once fairly ascended into the abdomen, it is impossible for it to return into the pelvis, until its volume has been diminished by delivery or abortion.

In most of these cases, the suppression of urine is the only material object to be attended to ; for the uterus being retroverted, the woman cannot make water ; therefore it must be drawn off by the catheter. If necessary, this operation is to be repeated twice a day, till the uterus, by a gradual enlargement, recovers its natural situation, which will be preferable to any interference of the attendant to reduce it. Where it is impossible for him to attend twice a day for the purpose of draining off the water, the reduction may possibly be effected by the patient placing herself on her hands and knees, and then passing two fingers of one hand into the vagina, and a finger of the other into the rectum, by which means it is possible sometimes to succeed. Where the event is left to time, the uterus is sure to recover its proper situation ; for which reason it is preferable to leave it.

In passing the catheter in cases of retroverted uterus, it will be necessary to attend to its curve, which curve is given by holding the instrument in one hand, and pressing the thumb on the other hand on one side, while it is gently drawn through the hand. The point of the catheter must be dexterously introduced close behind the pubes : for if some dexterity is not used, it frequently will not pass into the bladder.

Troublesome Itchings.—Where a severe itching about the parts of generation attends on pregnancy, it will be proper to keep the woman's body perfectly open with some cooling laxative, and to wash the parts three or four times a day with a diluted solution of lead ; if much inflammation accompanies the itching, topical bleeding may be requisite.

Œdematous Swellings.—The swellings of the feet, ankles, and private parts, which arise in the last stage of pregnancy, are occasioned by the pressure made by the womb, which now prevents the free return of the blood from the lower extremities. Gravid women are usually free from these complaints in the morning, but towards night they frequently suffer much from them. Slight scarifications with the edge of a lancet, to discharge the stagnated fluid, with the after-application of flannels wrung out in a warm infusion of emollient herbs, have been

employed in cases of great distention. In general, however, it will only be necessary that the patient does not keep her feet in a pendent position for any length of time.

Cramp.—Cramps of the legs and thighs are to be relieved by rubbing the parts with cold vinegar, or with camphor dissolved in oil, the person wearing stockings in bed. At an advanced period of pregnancy, they are only to be relieved by labour removing the cause. Where the stomach is affected with spasms, proper doses of æther and tincture of opium, with the other means advised under the head of Hysteria, in cramps of that organ, will afford the greatest benefit. In such cases the patient must carefully avoid every kind of food that is apt to prove flatulent or hard of digestion, and she must keep her body perfectly open.

Inability of sleeping and Restlessness.—Inquietude and inability to sleep prove troublesome complaints towards the latter period of pregnancy, the patient being obliged to rise frequently throughout the course of the night, in order to expose herself to the influence of cool air. Nothing affords so great relief in cases of this nature as bleeding in small quantities, with the occasional use of some cooling laxative medicine. Opiates are never attended with advantage in such conditions.

Varicose Veins.—The veins of the legs, thighs, and belly, often become varicose, in the last stage of pregnancy, and sometimes put on an alarming appearance from their great enlargement and distention. No bad consequences have, however, been observed to attend such a condition, and the only thing necessary to be done is to empty the vascular system by moderate bleeding, gentle purging, and a spare diet. Should the vein of any particular part become so distended as to prove troublesome, it may be advisable to apply a bandage of a moderate tightness, so as to give the necessary support to it.

Jaundice.—If a jaundice, or any other bilious affection, prevails during a state of pregnancy, as sometimes happens, from the pressure of the uterus on the gall-bladder or ducts, it is to be obviated by keeping the body open with some gentle laxative, such as pills composed of rhubarb and soap.

Incontinency of Urine.—An incontinency of urine in pregnant women is only to be removed by delivery.

Over-distention of the abdominal Skin.—In the latter months of pregnancy, the integuments of the abdomen will sometimes become cracked and sore, the skin seeming to suffer from over-distention. In this case, nothing is so effectual as a frequent use of warm oil by friction, and, to give it somewhat of a medicated appearance, a little camphor may be added.

False Pains.—Pains somewhat resembling those of labour, and known by the name of false pains, are apt to come on at an advanced stage of pregnancy, and often to occasion an unnecessary alarm. In such cases, confinement in an horizontal position, bleeding, if plethoric, laxative medicines, if costive, and administering small and frequent doses of some opiate until the patient finds ease, will be necessary.

Of Convulsions.—Cases of puerperal convulsions bear some likeness to epileptic fits, and it is only by being aware of the different degree of violence attending each, that at first sight we can distinguish them. A fit of puerperal convulsion is much more severe than one of epilepsy, and a paroxysm of the former is usually so violent, that a woman, who when in health was by no means strong, has been so convulsed, as to shake the whole room, and to resist the coercive powers of many attendants. No force indeed can restrain a woman when in these convulsions. The distortion of her countenance is beyond conception; in regard to deformity of countenance, nothing bears any resemblance to the progress of this disease; the rapidity with which the eyes open and shut, and the sudden twirlings of the mouth, are inconceivable and frightful.

Puerperal convulsions seldom happen before the sixth month, but may occur at any time between this period and the completion of labour. They may arise as the first symptom of labour, or after the labour is finished. This species of convulsion depends on the state of the uterus, and has been observed to arise oftener during the first pregnancy than in any after one, particularly where the woman is unmarried.

The characteristics of puerperal convulsion are as follow: The paroxysms occur periodically, like labour pains, so that there is a considerable space between them at first, but afterwards they become more frequent. They not only occur with the labour pains, but in the intervals between; and whether there have been labour pains or not before they come on, we shall usually find the os uteri somewhat dilated, and it is sure to become still more so from the continuance of these convulsions. At length, if the woman is not relieved, and the convulsions continue without destroying life, the child is actually expelled by the contraction of the uterus, which power is capable of expelling it even after death.

In these convulsions, respiration is first affected with a hissing and catching; the patient then stretches herself out, and immediately the struggling commences. After the convulsions have continued for a time, the woman foams at the mouth, and snores like an apoplectic patient, indicating great fulness about the brain. These symptoms are succeeded by a comatose sleep, out of which she awakes much astonished on being told what has happened, not at all conscious that she has been in a fit, and then she will fall into another, out of which she will again recover as before. It rarely happens that the understanding is taken away in this disease, however, until the fits have been repeated several times. During the fit, the skin becomes dark and purple, proving that the circulation through the lungs is not free, which purple colour leaves the woman after the fit is over. By the introduction of the hand into the uterus, when these convulsions have come on, it has been ascertained that this organ is contracted, but with a tremulous undetermined sort of force, perfectly different from what takes place at any other time.

There are two cases of puerperal convulsion which are very distinct: one is a convulsion dependent on an irritable or excitable state of the nervous system; the other on a fulness of the vessels of the brain, or perhaps a slight extravasation from the vessels thereof. When puer-

peral convulsion arises from the latter cause, it is always preceded by some symptoms, which, if watched, will enable us to relieve, if the patient applies in time, but which is rarely done; and if these symptoms are neglected, at some period or another, convulsions will follow. In a woman strongly disposed to this complaint from such a cause, there will be a sense of great fulness in the head, giddiness in the advanced periods of pregnancy, and a sensation of weight when she stoops forward, imperfect vision, and atoms floating before the eyes. These symptoms strongly denote fulness of the vessels of the head, and if allowed to continue, may lead to extravasation, or puerperal convulsion; but if early attended to, may be removed, and premature labour prevented. Under such circumstances, the first step to be adopted is, to draw ten or twelve ounces of blood from the arm, repeating the operation the next day or so, if no alleviation takes place. After the first bleeding, the bowels should be opened by some mild purgative, such as the neutral salts and manna, which may be repeated every third or fourth morning, until the plethora is removed. With these means, the patient ought to abstain from all solid food, and wine, &c.

When these precautionary means have not been adopted, and puerperal convulsions have ensued, we are, on being called in, to open a vein immediately, if we perceive a fulness in the vessels of the head, and to draw blood in a considerable quantity, being regulated therein by the appearance of the person, and her habit of body. From twelve to twenty ounces may be the extent of the first bleeding. If the disease goes on, and the os uteri does not admit of delivery from its not being dilated, the convulsions not abated or gone off, and the pulse in such a state as to admit of it, we should bleed again and again. Sixty ounces of blood have been drawn off in the course of the twenty-four hours under these circumstances, and with a happy effect. Women in such a state admit of divided bleedings very largely. After the first bleeding, the head should be immediately shaved, and a blister of considerable size be applied to it. The next point to be attended to is to get the bowels to act as quickly as possible, and this will be effected by throwing up a solution of soft soap as a clyster, and then giving a strong solution of some neutral salt, as magnesia vitriolata, kali tartarisatum, or natron tartarisatum, with an infusion of senna.

If it is a case of convulsion depending upon irritation, we may likewise bleed, but we must proportion the quantity accordingly. Eight or ten ounces of blood will be sufficient, and where more may appear necessary, it will be best to draw the remainder by applying leeches to the temples. In cases dependent on irritation, opium will be highly proper, and it ought to be given to the highest possible extent.* We are at the same time not to neglect the bowels, which should be kept

* ℞. Aq. Menth. Sativ. ℥j.
Æther. Vitriolic. ℥ss.
Tinct. Castor ℥j.
——— Opii gutt. L. M.
ft. Haustus 4ta vel 6ta hora repetendus.

perfectly open. Some physicians recommend the use of a warm bath, while others again disapprove of it. The pediluvium, or the application to the soles of the feet of bottles filled with warm water, may, at any rate, be proper.

Dr. Denman * mentions that he has seen the patient relieved from that state of irritation immediately preceding the convulsion, by dipping feathers in cold water, and dashing this with force over the woman's face, as this roused her, and interrupted the progress of the fit. Where the further application of cold may be deemed necessary and appear advisable, we may throw water over the patient's head, bringing this over the side of the bed, and holding an empty pail underneath to receive it. This should be done on the approach of the fit, which may be ascertained by attending to the vibrations of the intercostal muscles.

In all cases of puerperal convulsion, after having paid due attention to the lessening of the cause which has given rise to it, we should uniformly exert our best endeavours to dilate the os uteri, and deliver the woman as expeditiously as possible where it is practicable.

Where convulsions continue after the uterus is emptied of its contents, all that we can do is to keep the brain unloaded, the bowels open, and the irritability of the system counteracted by opium, joined with other antispasmodics, such as musk and æther. Where the disorder continues many hours, we may apply a large blister to the head, and if benefit is not obtained by the next day, one may also be applied to the inside of each leg. These, by exciting an irritation upon a part distant from the seat of the disease, may tend to diminish the diseased action, and thereby afford some relief.

To prevent puerperal convulsions from supervening, as they are in every instance to be considered as highly dangerous, particularly at an advanced stage of pregnancy, it will be prudent, in robust and plethoric habits, to pay an early attention to a use of the lancet during the progress of pregnancy, by drawing off a sufficient quantity of blood at different periods, taking care at the same time, and particularly near the termination of pregnancy, to keep the body open by cooling purgatives. In women of irritable nerves, all exciting causes should be carefully avoided, and the habit ought to be strengthened as much as possible, and thereby be rendered less susceptible of disagreeable or ready impressions.

Of ABORTIONS.

By abortion is to be understood the expulsion of the contents of the gravid uterus at a period of gestation so early as to render it impossible for the fœtus to live. It is an accident or disease of frequent occurrence, which is always attended with disagreeable circumstances, and which, although it seldom proves immediately fatal, may still be productive of much mischief at a future period.

* See his Introduction to the Practice of Midwifery.

Abortions may happen at any period of pregnancy, but they take place most frequently about the third or fourth month.

From the end of the third month to the period of quickening, there is a greater susceptibility in the uterus to have its action interrupted than either before or afterwards, which is the reason of more miscarriages happening at that time than at any other, and points out the necessity of redoubling our vigilance in watching and guarding against the operation of any of the causes from the tenth to the sixteenth week, that may be likely to excite abortion.

When a woman happens to part with her burden before the seventh month, she is said to have miscarried or aborted; but when delivered of it after this time, the term labour is usually applied.

Children born at the end of the seventh month are seldom reared, and when they are, they usually prove small and weakly; but those of eight months are frequently preserved by bestowing proper care on them.

In consequence of an imperfect conception, it sometimes happens that moles or substances of a fleshy nature (which upon being cut open contain not the smallest vestige of a child) are formed in the uterus; and these at length becoming detached, give rise to a considerable degree of hemorrhage.

As some women menstruate during the first months of pregnancy, it will be necessary to distinguish between an approaching miscarriage and a visitation of the menses, which may readily be done by inquiring, whether or not the hemorrhage has proceeded from any evident cause, and whether it flows gently or is accompanied with unusual pains. The former generally arises from some fright, surprise, or accident, and does not flow gently and regularly, but bursts out of a sudden, and again stops all at once, and is also attended with severe pains in the back and bottom of the belly; whereas the latter is marked with no such occurrences.

Voluptuous women who are of a plethoric habit, as well as those who are of a weak and irritable frame, are most apt to miscarry; but accidents of this nature sometimes occur from a general defective constitution, or rather from a mal-conformation of the sexual organs.

The causes which give rise to floodings during a state of pregnancy are, violent exertions of strength, lifting some heavy weight, severe exercise, as dancing or much walking, the fatiguing dissipations of fashionable life, sudden surprises and frights, violent fits of passion, great uneasiness of mind, uncommon longings, over-fulness of blood, aloetic purges, profuse evacuations, excessive venery, former miscarriages, weakness in the parts immediately concerned, a diseased state of the uterus, general debility of the system, external injuries, as blows and bruises, strong acrid medicines, such as savin and hellebore, which are often taken for the express purpose of exciting abortion, and the death of the child. In consequence of any of these, the placenta becomes partially or wholly detached from the uterus, leaving the mouths of the vessels of the latter, which anastomosed with those of the former, perfectly open,

Abortions are sometimes induced by what is termed a retroversion of the uterus, in which the fundus uteri is retroverted and pressed down between the rectum and the vagina. This rarely occurs however beyond the first or second month of gestation, and is generally preceded by a difficulty in making water, and a consequent tumour of the bladder; a violent pain about the perinæum or rectum is thus caused, and a miscarriage is liable to follow.

Abortions are often preceded by a general sense of coldness, flaccidity of the breasts, slight pains in the loins, and lower region of the belly; and sometimes with a slight febrile state of the system. In plethoric habits, and where abortion proceeds from over-action or hemorrhagic action of the uterine vessels, the fever is idiopathic, and precedes the hemorrhage. After a short continuance of these symptoms, a slight discharge of blood ensues, coming away sometimes in clots, and at others, gushing out in a florid stream, then stopping perhaps for a short time, and again returning violently.

Sometimes nothing but coagulum can be perceived, that is so firm, and the globules and lymph so disposed as to give it, more especially if it has been retained for any time about the uterus or vagina, a streaked or fibrous appearance, which often gives rise to a supposition that it is an organized substance. When the contents of the uterus are expelled, a bloody discharge continues for a few hours, and is then succeeded by a serous fluid.

When the pregnancy is advanced beyond the third month, and abortion is likely to ensue, we have much bearing down, together with a derangement of the stomach, causing sickness and faintness, and we have likewise a most rapid discharge, owing to the increased size of the vessels. In this stage, the membranes often give way, and the fœtus escapes with the liquor amnii, whilst the rest of the ovum is retained for some hours, or even days, when it is at length expelled with coagulated blood. In some instances the whole ovum comes away entire. After the expulsion, the hemorrhage ceases, and is succeeded by a discharge somewhat resembling the lochia.

With regard to the symptoms and duration of abortion, there is a great diversity in different instances. In some cases, the pains are very severe and long continued; in others, short and trifling. Sometimes the hemorrhage is profuse and alarming; at other times, although circumstances may not be apparently very different, it is moderate or inconsiderable. Often the sympathetic effects of the stomach and bowels are scarcely productive of inconvenience; whilst in the greater number of instances they are very prominent symptoms. As there is a diversity in the symptoms, so there is also in the duration of abortion; for whilst a few hours in many, and not above three days in the majority of cases, is sufficient to complete the process, we meet with other instances, in which it is threatened for a long time, and possibly some weeks elapse before the expulsion takes place.

Floodings are more or less dangerous according to the stage of pregnancy in which they happen. The farther a woman is advanced therein, the greater will be the risk, especially if unaccompanied by labour

pains, as the mouths of the vessels which pour out the blood are much enlarged during the last stage of pregnancy, and of course a vast quantity will be discharged in a short space of time. Although miscarriages before the fifth month are seldom attended with immediate danger, the loss of blood being usually small, they nevertheless frequently lay the foundation of many grievous ailments by happening repeatedly. Some women are visited by habitual miscarriages, and observe a stated period for several successive pregnancies, which is more usually about the third month, than at any other time.

The danger of abortion is to be estimated by considering the previous state of health and habit of the patient, by attending to the violence of the discharge, the duration of the complaint, the difficulty of checking it, the disposition to expulsion which accompanies it, the period of gestation at which it is threatened, the frequency of its occurrence, and its combination with spasmodic affections or convulsions.

Previous to my pointing out the best means for checking an abortion, and the method of conducting the woman through it when it cannot be avoided, it appears proper to notice those steps which should be taken for preventing miscarriages in those to whom they are rather habitual. In all such cases it will be highly necessary to attend to the history of such former accidents, to the usual habitudes and constitution of the woman, and to her condition when she becomes pregnant.

A woman that is subject to habitual abortions, and who is of a full plethoric habit, ought to be bled just before the usual time of her miscarrying. She should likewise keep her body perfectly open with gentle aperient medicines; use a spare diet, consisting principally of vegetables, and avoid all agitations of the mind, severe exercise, violent efforts, and such objects as may be likely to make a disagreeable impression on her. The sleep should be abridged in quantity, and not be taken on a bed of down, but on a firm mattress, preventing at the same time the accumulation of too much heat about the body. Every day she ought to take regular and moderate exercise, being cautious at the same time not to carry it to the length of exciting fatigue.

To bridle the circulation in women of a full plethoric habit that are subject to habitual abortions, in addition to drawing off a little blood from the arm when the pulse is full or inclined to throb, it would appear advisable to give half a grain of digitalis twice or thrice a day, continuing this medicine until after the usual period of the woman's miscarrying.

In women of a weak lax habit, bleeding would be highly improper as a mean of preventing habitual abortion. For such, a nutritive and generous diet, moderate exercise in a carriage, cold bathing, and a course of chalybeates, with other tonics, will be necessary, the patient at the same time avoiding all exciting causes. Until gestation be far advanced, it would even be advisable to live absque marito. Indeed in every instance of habitual abortion, whatever the condition may be that gives rise to it, it will be essential that the greatest attention be paid to the avoiding the exciting causes. In some cases it may even be necessary to confine

the patient to her room until the period at which she usually aborts is past.

In those cases of habitual abortions accompanied with spasmodic pains in the uterus, or a disposition to convulsions, opium given in small doses twice a day might prove eminently serviceable.

Where nausea or vomiting prevails in a high degree, in addition to the means before pointed out, we may apply either an opium plaster, or a blister, to the region of the stomach.

An abortion being threatened in consequence of some slight separation of the placenta from the uterus, may frequently be stopped by immediately adopting proper steps, and the woman be enabled to go out her full time.

On the first appearance of a flooding, the woman should be confined to her bed, and be placed with her hips somewhat more elevated than her head, keeping her at the same time perfectly cool, debarring her of all food of a heating stimulant nature, and giving her cold liquors to drink sharpened with some agreeable acid.

With the view of moderating the symptoms attending the progress of a threatened abortion, and preventing it, if possible, from actually taking place, it may be proper in robust and plethoric habits, and where the pulse is in any measure full and frequent, to take away a little blood from the arm; after which, if the bowels are confined, we may administer a laxative clyster.

If the discharge is copious, it will be advisable to prescribe opiates in small and frequently repeated doses, so as to keep up a constant effect, and they may be combined either with refrigerants,* or with astringents,† or with both. To assist the effect of these medicines, anodyne clysters may be injected from time to time, and linen cloths wrung out in cold vinegar and water be kept constantly applied to the back and private parts.

Astringent injections composed of a saturated solution of alum, vitriolated zinc, or cerussa acetata, or of a decoction of oak-bark, are often employed in floodings; and where the hemorrhage is slight or remits for any length of time, they undoubtedly will prove beneficial, and ought, therefore, to be used as mentioned under the head of Menorrhagia: but

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* ℞. Infus. Roſæ ℥jſs.
Nitri Purific. ʒſs.
Tinct. Opii gutt. xv. M.
ft. Hauſtus ȝtia vel 4ta quaque hora ſumendus.

† ℞. Confect. Opiat. ℈j.
Aq. Menth. Sativ. ℥jſs.
Tinct. Catechu.
—— Kino ää ʒj. M.
ft. Hauſtus.

Vel

℞. Aluminis gr. xv.
Gum. Kino gr. v.
Opii gr. ſs.
Conſerv. Ros. q. s. M.
ft. Bolus 6ta hor. ſumendus cum Coch. iij. Infuſi Roſæ.

Vel

℞. Alum. Rup. gr. xij.
Terr. Catechu gr. vj.
Confect. Opiat. gr. xv. M.
ft. Bolus.

in floodings unaccompanied by any remission, they are by no means likely to afford much relief.

In such cases it will be best to trust to the formation of a coagulum. Rest will be absolutely necessary, if we wish the woman to go out her full time; and therefore it is sometimes necessary to confine her for a few weeks perhaps to her bed, at the same time that we put her upon an effective course of digitalis,* giving her an anodyne at bedtime, but taking care to keep the bowels in a proper state by some gentle aperient medicine.

Where we cannot prevent the abortion, our study must be to conduct the patient safely through the process; and the point which first claims our attention, is the hemorrhage. Bleeding is an operation employed by some practitioners to check this; but unless the vessels are above their natural force and strength of action, it is not likely to do any good. Indeed the fulness and strength of the pulse are lost much sooner in an abortion than can be explained by the mere loss of blood. Instead of bleeding, we had better therefore give the digitalis, if there is no irritation at the stomach. In protracted cases where the discharge has continued long, this medicine will be highly proper.

When the means above mentioned have been pursued without the desired effect, and the woman becomes exposed to imminent danger from great loss of strength, it will then be necessary to have recourse to powerful astringents,† such as zincum vitriolatum, vitriol. cupri, and cerussa acetata. Of this last we may give one, two, or even three grains, repeating the dose every three or four hours, according to the urgency of the case. As soon however as the hemorrhage has ceased, a gentle purge of the oleum ricini should be administered, in order to prevent any bad effect from the action of these remedies on the coats of the stomach and intestines. Astringents used internally have however been thought by some to possess little effect, unless they excite sickness, which is a different operation from what is expected from them.

The application of linen cloths dipped in cold water to the back and external parts will have a much better effect than internal astringents, and ought therefore never to be neglected. The introduction of a small piece of smooth ice into the vagina has often a very speedy effect in retarding the hemorrhage. A snow-ball wrapped in a bit of soft linen

* ℞. Pulv. Digital. Purp.
Opii ää gr. fs.
Conferv. Ros. gr. xij. M.
ft. Bolus 4ta quaq. hora sumendus.
Vel
℞. Tinct. Digital. Purp. gutt. xx. 4ta quaq. hor. in quovis vehiculo.
Vel
℞. Fol. Digital. Purp. Recent. ℥ij. Coque ex Aq. Pur. ℔bj. ad Colat. ℥vijfs. et adde Tinct. Cardam. ℥fs.
Sumat ægra femiunciam 4tis horis.

† ℞. Tinct. Saturnin. gutt. xv.—xxx. pro dos. in quovis vehiculo.
Vel
℞. Vitriol. Cupri gr. v.
Aq. Rofæ ℥viij.
Tinct. Opii gutt. L. M.
ft. Miftura cujus fumat Cochl. j. ℥tis vel 4ta quaq. hora.
Vel
℞. Zinc. Vitriol. gr. ij.—v.
Conferv. Ros. ℈fs.
Opii gr. fs. M.
ft. Bolus 4ta hora fumendus.

will have the same effect; but neither of these should be continued so long as to produce pain, or much and prolonged shivering. The heat of the surface may also be moderated, by covering the bed lightly with clothes, and admitting a free circulation of air.

The most effectual local method however of stopping the hemorrhage is by plugging up the vagina;* and this is best done by taking a pretty large piece of soft cloth, dipping it in oil, and then wringing it gently. This is to be introduced with the finger, portion after portion, until the lower part of the vagina be well filled. The remainder is then to be firmly pressed on the orifice, and held there for some time. This acts by giving time to the effused blood to coagulate. In obstinate cases, previous to the introduction of the plug, we may insert a little pounded ice, tied up in a rag, if to be procured.

To recapitulate the means which we are to employ for restraining the hemorrhage: if the pulse be full, hard, and frequent, bleeding is to be resorted to; but if not, we are to trust to digitalis; the application of cold to the external parts; keeping the heat of the body at a low temperature; absolute rest, and which must be continued during the whole process, however long it may be; cold acidulated liquors for ordinary drink, light food taken in small portions at a time, and plugging up the vagina.

Where any sickness or great feebleness attends on an abortion, the body is to be kept at rest with the head low; and we may at the same time give small quantities of some stomachic cordial, such as a few drops of æther in a little cinnamon-water, or a little peppermint-water with fifteen or twenty drops of the tincture of opium. In very urgent cases, Madeira or diluted brandy may be given, but these are not to be frequently repeated. Where spasmodic contractions attack the stomach, producing sudden and violent pain, a full dose of the tincture of opium conjoined with æther, must be ordered immediately. Spasms about the intestines are also to be relieved by opium in some form or other.

Where abortion is accompanied by strong hysteric paroxysms, besides attending to the state of the discharge, the best practice is to keep the woman very cool, and to give her thirty or forty drops of tinctura opii, with about two drachms of tinctura valerianæ ammoniata in a little peppermint-water every four or six hours. A clyster composed of cold water, with the addition of two drachms of the tincture of asafœtida, is also sometimes of service.

If the woman is in the last stage of pregnancy, and all our endeavours to stop or repress the hemorrhage prove abortive, and it seems to endanger her life from its severity, it then will be necessary to deliver her as expeditiously as possible, although it may probably be attended with much difficulty, unless assisted in the dilatation of the parts by the coming on of the natural labour pains. If the ovum be still entire, and the pregnancy be considerably advanced, the expulsive action is to be excited by rupturing the membranes.

It sometimes happens in abortions, that the whole ovum does not

* See Mr. Burns's Treatise on Abortions.

come away at once, but only the fœtus, and that either a part, or the whole of the secundines remain behind. These by long retention give rise to an offensive discharge from the vagina, and a febrile state accompanied with hysterical affections. In such instances, instead of endeavouring to extract the remains of the ovum, either with the forceps or fingers, which would be productive of irritation, it will be advisable to keep the parts clean, by injecting an infusion of camomile-flowers with a small quantity of oxygenated muriatic acid; to keep the bowels open with gentle laxatives or clysters; to support the strength by light nourishment with small portions of wine frequently repeated, and plenty of subacid fruit; whilst at the same time we procure rest, or allay irritation, by opiates, if necessary.

After every abortion the woman should be confined to bed for a few days, as getting up too soon is apt to produce a debilitating discharge. Should any morbid symptoms present themselves, they are to be obviated by a suitable treatment. If the patient continues weakly for any time, the use of a cold bath, with bark and other tonics, a generous diet, and pure air, will be necessary.

It has been before observed, that miscarriages are sometimes induced during the first or second month of gestation by the fundus uteri being retroverted and pressed down between the rectum and the vagina; in which case they are preceded by a difficulty of making water, and a consequent tumour of the bladder, together with a violent pain about the perinæum or rectum. On such occasions draw off the urine with a catheter, and inject an enema with sixty drops of the tincture of opium, if it can be done. Should these symptoms recur after the miscarriage, a wax-candle, or a pessary, made by rolling some emplastrum de minio spread on linen, may be introduced into the rectum, and worn as a compress to prevent the return for a few days, till the parts recover their strength. See Dr. Hunter's Tables of the gravid Uterus, and London Medical Observations, vol. iv. p. 388.

Of the DISEASES which attend on the PUERPERAL STATE.

PARTURITION, it is well known, is a natural process, and cannot therefore be considered as a disease; but still it often lays the foundation of many distressing complaints, and is now and then attended even with fatal consequences. The ailments which will chiefly require the practitioner's attention are the following, viz.

AFTER-PAINS.

Shortly after delivery, these usually come on, and with some women prove remarkably severe. The quicker the labour has been, the slighter will they prove in general. Women with their first child are seldom much troubled with after-pains; but as the uterus contracts less readily after each future labour, so they are more liable to suffer from them in any succeeding delivery, than in the first.

When after-pains prove so troublesome as to deprive the patient of her rest, it will be necessary to have recourse to opiates joined with other antispasmodics.* Hot cloths or bladders filled with warm water may be applied as an external fomentation. These means are to be assisted by keeping up a sufficient pressure on the belly at the same time, by means of a broad bandage.

COSTIVENESS.

This is apt to prevail after delivery, and should always be removed by a laxative clyster, or some gentle purgative, such as a solution of salts and manna, or about an ounce of the oleum ricini.

FLOW OF THE LOCHIA.

In all women a certain degree of hemorrhage usually takes place after delivery, produced by the removal of the placenta, which thereby lays bare the mouths of the blood-vessels in the inside of the uterus; and this commonly continues until the womb contracts to such a size as to close them up again. The discharge for the four or five first days consists usually of florid blood, after which time it assumes a mucous appearance, and so ceases gradually.

In weak and relaxed habits, it sometimes happens, that, instead of saturating a cloth now and then, as is natural to all women, the blood gushes out with such rapidity and violence as to run quickly through all the bed-clothes, and even to soak through the bed itself; in which case, the patient will be reduced to a state of great debility, if the hemorrhage is not soon restrained. To effect this, the means recommended under the heads of Menorrhagia and Abortions must be adopted.

Where a suppression of the lochia ensues before the accustomed period, the discharge ought again to be promoted, if possible, by plentiful dilution, and the application of warm fomentations to the parts. Should these means prove ineffectual, gentle evacuations must be made.

THE MILK FEVER.

About the third or fourth day after delivery, the breasts generally become turgid and painful, from the secretion of milk which then takes place in them. When this is moderate and free, no inconvenience will be experienced; but when copious and accompanied by any obstruction in the lactiferous tubes, in consequence of the use of some repellent application, or of an exposure to cold, the breasts will then become hard, swelled, and painful, and a small fever will arise, accompanied by nau-

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* ℞. Aq. Cinnam. ℥jß.
Tinct. Opii gutt. xxxv.—l.
—— Caſtor. ʒß.
Syrup. Violæ ℥ij. M.
ft. Hauſtus hora ſomni ſumendus.

Vel

℞. Caſtor. Ruſſic. gr. x.
Camphor. gr. iij.
Opii gr. jß.
Conſerv. Roſæ q. s. M.
ft. Bolus.

sea, restlessness, pains in the head and back, and a considerable degree of thirst.

To prevent any consequences of this kind, it will always be advisable to apply the child to the breasts at a very early period after delivery. By delaying to do so immediately on the secretion of milk commencing, the breasts are not only apt to become much enlarged and distended, but the nipples are often so much retracted, that the child cannot lay hold of them without the greatest difficulty.

Where the mother's health will not admit of her suckling the child, or any other thing happens to prevent it, she should be careful to have her breasts drawn three or four times a day by some other person; and with the view of preventing a copious secretion of milk, she should use a very spare diet, keep her body perfectly open with laxative medicines, and abstain as much as possible from all liquids. This mode of proceeding will be far preferable to the use of repellent applications to dry up or put a stop to the secretion.

If any degree of fever arises, besides confining the patient to a spare diet, keeping her very quiet, and obviating costiveness by means of cooling laxatives, we may give her small and frequently repeated doses of antimonials, together with refrigerants, such as nitre, as advised under the head of Simple Fever.

INFLAMMATION AND TUMOURS IN THE BREASTS.

From neglecting to put the child at an early period to the breasts, or to get them drawn by some other person, accidents of this nature happen very frequently to lying in women.

With respect to the mode of treating these kind of tumours, practitioners differ very much; some asserting that discussion should always be attempted, and others, that they ought to be allowed to suppurate; as, when the discussion does not succeed, there may be some danger of inducing a scirrhous affection of an obstinate nature. I think the same practice should be adopted in this case of inflammation as in every other, and that the discussion of the tumour ought by all means to be attempted on its first appearance; the distress and pain which always attend on a suppuration of the mamma being very great. When the inflammation and swelling have been of such long standing as to shew an evident tendency to suppurate, any attempt to discuss the tumour will not be advisable.

Where discussion is proper, recourse should be had at a very early period to a strict pursuance of the antiphlogistic plan. The strength is to be supported by a cool spare diet; the body is to be kept perfectly open with mild laxatives; febrile heat is to be abated by refrigerants, such as nitre, with the aid of frequent small doses of some antimonial, such as the pulvis Jacobi, pulvis antimonialis, or solution of tartarised antimony; pain and irritation are to be allayed by sufficient doses of opium; and the inflammation, when considerable, is to be abated by means of leeches applied to the part, as likewise by the constant application of linen cloths

dipped in some sedative lotion.* To assist the effect of these means, the breasts are to be evacuated frequently throughout the course of the day, but more particularly the one diseased, either by the infant or some other person accustomed to the business. When they are so much swelled as not to allow of laying hold of the nipple, the proper glasses made for that purpose should be employed.

If the tumour proceeds to suppuration, notwithstanding we may have used every endeavour to prevent it, we should then assist the operations of nature by the application of emollient poultices and fomentations. As soon as the suppuration is completed, the tumour should be opened, after which it may be dressed with dry lint, and a pledget spread with some kind of digestive ointment be laid over all. Should any fresh suppuration ensue, which not unfrequently happens, the same mode of treatment must be adopted; and that proper pus may be formed, the Peruvian bark, with a moderate quantity of wine, will be necessary.

EXCORIATIONS OF THE NIPPLES.

From the constant state of moisture in which these parts are kept with those who give suck, such occurrences are very apt to happen. When excoriations do arise, the parts should be washed two or three times a day with a diluted solution of alum, the cerussa acetata or aq. lithargyri composita, in rose-water, and then be sprinkled with a little powder of the lapis calaminaris or tutty. To prevent the sore from being aggravated by sticking to the woman's clothes, a little cup made of wax may be laid over the nipple, which is the part most apt to suffer. If only one nipple is affected, the child may be confined to the other; but if both are affected, and the pain occasioned by its sucking is too great to be borne, the woman must then desist from the duties of a mother until the excoriations are somewhat healed, taking care, however, to have her breasts drawn regularly twice or thrice a day. As long as we are under the necessity of applying any of the preparations of lead to the nipples of the mother, it will be prudent not to suffer the child to suck her, as there is reason to fear that it might be materially injured by so doing.

When great soreness of the nipples has taken place, it has been proposed, with the view of protecting them, to use an artificial teat, by which the child will be able to suck tolerably well, and the nipple itself being undisturbed to heal soon. The way in which one of these substitutes is prepared, is to procure a fresh teat from a heifer, and scooping out the inside to steep the skin in spirits for an adequate length of time, and then fasten it on the glass instrument; glass is preferable, because, by seeing the milk, we may be assured that the child is properly nourished. A woman is capable of giving milk with

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* ℞. Aq. Ammon. Acet.
Spirit. Vin. Rectif.
Aq. Distillat. āā ℥ij. M.

Vel

℞. Ammon. Muriat. ℥ij.
Acet. Acerrim. ℥ij.
Spirit. Vin. Camp. ℥ss.
Aq. Litharg. Acet. gutt. xxv. M.

a flat, or even concave surface, by drawing it out with a glass tube, that has a small ball to it, by which a vacuum is produced, immediately the glass is removed; the child being put to the breast will keep it out by sucking until satisfied.

MILIARY ERUPTIONS.

In consequence of keeping women very warm, and of using a heating diet, it not unfrequently happens that miliary eruptions, attended with some degree of fever, arise during a puerperal state. Sometimes they are dispersed over the whole body, but they are more usually observed about the neck and chest.

To conduct the patient with safety through the disease, the practitioner must have recourse to the means advised under the head of Miliary Fever. Should the eruptions strike in suddenly, and the pulse sink, blisters, with cordial sudorific medicines and wine, will be proper.

Affections of this nature may however be avoided in general, by an attention to diet, by keeping the patient's body perfectly open and her bed lightly covered with clothes, and by admitting a proper ventilation through her chamber.

OF THE PAINFUL INTUMESCENCE OF THE LOWER EXTREMITY INCIDENT TO LYING-IN WOMEN, OR PHLEGMATIA DOLENS PUERPERARUM.

Although this disease must have existed as long as most of the others to which lying-in women are subject, still it seems to have been only slightly noticed by any of the ancient writers. Mr. White's Inquiry into its nature and causes, which made its appearance in the year 1784, was the first regular treatise on it in this country, and it excited the attention of other practitioners to the complaint. In the year 1792, Mr. Trye of Gloucester published a small essay on the subject, and at different periods since that time Dr. Ferriar and Dr. Hull of Manchester have written on it.

Phlegmatia dolens appears, however, to be a disease of no frequent occurrence; for Mr. White mentions that out of 1897 women delivered at the Westminster General Dispensary, five only were attacked with it; and of 8000 women delivered at the Manchester Lying-in Hospital, and their own houses, no more than four were seized with it. During a practice of thirty years, a solitary case has fallen under my care. When we find practitioners giving in a report of numerous cases which came under their observation, we may, therefore, naturally presume that they have mistaken other diseases for it, such as anasarca, phlegmon, erysipelas, abscess, rheumatism, peritonitis, and puerperal fever. The disease, however, to which, in my opinion, it bears the strongest resemblance, is the glandular affection of the thigh and leg, noticed under the head of Elephantiasis.

The characteristic of phlegmatia dolens is a firm, glossy, warm, tense, elastic, painful, sudden swelling, of a pale white colour, which attacks the hypogastric region, the loins, nates, groin, labium pudendi, thigh, leg, and foot of a lying-in woman soon after delivery, or mis-

carriage at an advanced period of pregnancy. Mr. White looks on the swelling of the labium pudendi as an invariable symptom of the disorder, and he asserts that, when one limb only is affected, the intumescence is confined so exactly to the labium pudendi of that side, that if a line were drawn from the navel to the anus it would be found never to go beyond that line in the smallest degree. We are told, however, by Dr. Hull, that the swelling of the labium pudendi is to be considered rather as marking the extent, than serving to characterize the complaint; and he positively denies that this particular symptom is always to be met with; for some cases had fallen under his care in which it did not exist. On this point as well as on most others relating to the nature and causes of phlegmatia dolens these gentlemen do not agree in opinion.

Mr. White attributes the proximate cause of the disease in question to an obstruction, detention, and accumulation of lymph in the limb, and imagines the lymphatics to be obstructed as high up at least as where they enter the pelvis under Poupart's ligament, in consequence of some accident happening during labour, or some state peculiar to childbed. He conceives it might probably arise from the continued pressure of the lymphatic vessels by the head of the fœtus on the pelvis, which, he says, is often rough and sharp on its ridge, and might be followed by a rupture of these vessels in some part of their course.

The disease has been attributed by Mr. Trye to an obstruction of the lymphatics; but he apprehends that this originates in the inflammation of a trunk or trunks of these vessels, which inflammation may be excited by pressure or the absorption of some acrimonious matter.

Dr. Denman entertains sentiments pretty similar to those of Mr. Trye; for he believes the disease to arise first in the inguinal glands, by the absorption of some irritating principle in the discharge, the consequence of an unhealthy secretion from the uterus.

Dr. Ferriar is of opinion* that phlegmatia dolens may exist independently of every circumstance regarding parturition,† and he does not think it impossible for it to take place before delivery. The violent pressure on the internal iliacs, and the accompanying veins and nerves, which takes place during labour, must undoubtedly, he presumes, be considered as a powerful occasional cause of lymphatic inflammation, quite sufficient to account for the phenomena without the supposition of a rupture of the vessels.

He adds, that the constitution is much more irritable, more liable to febrile and inflammatory complaints, after than before delivery. The balance of the circulating fluids is suddenly and violently changed; there are new determinations, new sympathies produced in a state of debility, agitation, and anxiety. It cannot, therefore, surprise us, that, under circumstances so peculiar, a set of vessels, commonly exempted from inflammatory affections, should take on an unusual disposition.

These theories are rejected by Dr. Hull, as being inadequate to explain the various phenomena of the disease; and he offers the following,

* See his Medical Hiſtories and Reflections, vol. iii.

† It certainly may; for I have a caſe now under my care in an aged woman, and of courſe unconnected with parturition.

which he conceives to be more consonant to its real nature.† As predisposing and exciting causes to it, he enumerates—1st, The increased irritability and disposition to inflammation which prevail during pregnancy, and in a still higher degree for some time after parturition. 2dly, The over-distended or relaxed state of the blood-vessels of the inferior part of the trunk, and of the lower extremities. 3dly, Contusions, or violent exertions of the muscles about the pelvis and thighs. 4thly, Plethora, occasioned by a suppression or diminution of the lochia, or of the secretion of milk. 5thly, Food taken too freely; and 6thly, Standing or walking too much or too early.

The proximate cause he supposes to consist in an inflammatory affection, producing suddenly a considerable effusion of serum and coagulable lymph from the exhalants into the cellular membrane of the limb; and he thinks that there exists a close connexion between phlegmatia dolens, puerperal fever, peritonitis, and some other disorders.

Such a conclusion, in my humble opinion, is not well founded; for phlegmatia dolens is a disease as distinct from either puerperal fever or peritonitis as it is possible to be. No inflammatory tendency prevails in the system in this complaint, neither are any of the abdominal viscera nor their peritoneal covering occupied by inflammation. The disease appears to be of a local nature, and confined to the lymphatics of the limb on the side affected. The slight temporary derangement which takes place in the system appears to be induced wholly by the local affection, pain, and distention.

Phlegmatia dolens generally takes place on one side only at first, and commonly begins in the hypogastric or inguinal region, or in the hip, or top of the thigh, and corresponding labium pudendi, preceded by rigors, and followed by pyrexia. In this case the patient perceives a sense of pain, weight, and stiffness in some of these parts, which are increased by every attempt to move the pelvis, or lower limb. If the part be carefully examined, it generally is found rather fuller or hotter than natural, and tender to the touch, but not discoloured. After a little time, the pain increases, always becomes severe, and in some cases is highly excruciating: it extends along the thigh, and at length the top of the labium pudendi becomes greatly swelled and distended; but on this happening, the pain is usually somewhat alleviated in these parts. It however extends down to the knee, and is generally most severe on the inside and back of the thigh. When it has continued for some time, the whole thigh becomes in its turn swelled, and the pain extending down to the leg and foot, these parts also swell; but on the swelling taking place, there is a considerable abatement of pain, and the woman does not experience much except she moves the limb.

The extremity being now swelled throughout its whole extent, appears perfectly or nearly uniform, and is not perceptibly lessened by an horizontal position like an œdematous limb. It is whiter than the natural colour, is hotter than usual, excessively tense, and exquisitely tender when touched. When pressed by the finger in different parts, it is

† See his Essay on Phlegmatia Dolens.

perceived to be elastic, little if any impression remaining, and that only for a short time. If a puncture or incision is made into the limb, in some instances no fluid is discharged; in others, a small quantity of fluid escapes, which does not coagulate, but the whole of the effused matter cannot be drawn off in this way. The swelling of the limb varies both in degree and in the space of time requisite for its full formation. In most instances it arrives at double the natural size, and in some cases at a much greater. In lax habits, and in patients whose legs have been very much affected with anasarca during pregnancy, the swelling takes place more rapidly than in those who are differently circumstanced; it sometimes, in the former class of patients, arrives at its greatest extent in twenty-four hours, or less, from the first attack.

After some days, generally from two to eight, the febrile symptoms diminish, and the swelling, heat, tension, weight, and tenderness of the lower extremity begin to abate, first about the upper part of the thigh, or knee, and afterwards in the leg and foot. Some inequalities are found in the limb, which at first feel like indurated glands; but, upon being more strictly examined, their edges are not so well defined as those of conglobate glands, and they appear to be occasioned by the effused matter being in different degrees of consistence in different points. The conglobate glands of the thigh and leg are sometimes felt distinctly, and are tender to the touch, but are seldom much enlarged; and as the swelling subsides, it has happened that an enlargement of the lymphatic vessels in some part of the limb has been supposed to be felt.

The febrile symptoms having gradually disappeared, the pain and tenderness of the limb being much relieved, and the swelling and tension considerably diminished, the patient is much debilitated, and the extremity feels stiff, heavy, benumbed and weak. It seldom if ever returns to its former size, but usually is considerably enlarged for the remainder of life, being always more easily affected by cold than the other, and after exercise it will be more stiff and weak than the sound extremity. It sometimes happens, that after the disease abates in one limb, the other is attacked in a similar way.

Phlegmatia dolens is often slow in its progress, and tedious in its cure; but it is rarely followed either by suppuration or gangrene; and still more rarely does it terminate fatally; the extravasated fluid being at length taken up, and returned into the circulation, although, from the great distention of the limb, there is usually much tenderness, pain, and a febrile disposition. We are told by Mr. White, that, when not complicated with any other disease, he has never known it to have a fatal termination; neither has he ever observed the skin to be so discoloured as to point out the presence of local inflammation: on the contrary, it is of a paler white than ordinary, which circumstance has induced him to name the disease Phlegmatia alba dolens Puerperarum. By Dr. Hull we are however informed that he has seen cases which have terminated in suppuration, as also in death.

With respect to the treatment of phlegmatia dolens, much must be left to the discretion of the practitioner, who ought to prescribe ac-

cording to circumstances. Should the disease be complicated with any other, such as phlegmon, erysipelas, anasarca, thoracic inflammation, puerperal fever, or peritonitis, then the means which are advised under these heads must be resorted to, in addition to paying a proper attention to the complaint itself.

When a woman who is of a robust plethoric habit is attacked shortly after delivery with a painful tense swelling of one of the lower extremities, accompanied by much heat, thirst, restlessness, and other symptoms of pyrexia, the antiphlogistic plan ought certainly to be pursued. Bleeding from the system in a moderate quantity, keeping the body open with saline purgatives, so as to procure one or two motions daily; administering small and frequently-repeated doses of some antimonial preparation, to promote a regular and gentle determination to the surface; giving plentifully of diluent liquids; confining the patient to bed; covering her lightly with bed-clothes, and keeping her chamber of a proper coolness, will undoubtedly be highly proper in all such cases. Where nausea exists at the commencement of the attack, an emetic may likewise be advisable, but otherwise it appears unnecessary.

If the irritability or excitability (adopt which term you may) of the system is much increased, and, from the severity of the pain in the limb, the patient is deprived of rest for a succession of nights, we may with safety, and much advantage, having premised proper evacuations, employ opium. The best mode of administering it will be to combine it with some diaphoretic,* and probably the pulvis ipecac. compos. may be as good a medicine as we can use. Along with the remedies before enumerated, warm bathing, or the semicupium, may possibly be of service.

Such is the general treatment to be adopted in phlegmatia dolens, when arising in a robust or plethoric habit, and where the febrile symptoms run very high; but the antiphlogistic plan would certainly be improper for a woman of lax fibres, and who has already been much debilitated by floodings, or other evacuations. In all those cases which are marked with general debility, an impoverished state of the blood, and a diminution of the tone and action of the heart and arteries, we should pursue the following course.

To remove the affection of the system, and at the same time expedite the cure of the local complaint, we should endeavour to restore proper energy to the constitution, as well as improve the state of the blood; and this is to be effected by bitters, chalybeates, and other tonic medicines, a nutritious diet, with a moderate allowance of wine, daily exercise on horseback or in a carriage, but more particularly the latter, and by cold bathing. To assist in carrying off the effused fluid, it may likewise be advisable to employ diuretics, such as crystals of tartar, squill, digitalis, &c. combined with cinchona, cascarilla, and other tonics. See Anasarca.

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* ℞. Aq. Ammon. Acet. ℥iij.
Mistur. Camphorat. ℥j.
Syrup. Papav. ℥ij. M.
ft. Haustus hora somni sumendus.

Vel

℞. Tinct. Opii gutt. xl.
Vin. Antimon. gutt. xv.
Aq. Puræ ℥j.
Syrup. Simpl. ℥ij. M.

Mercury has been recommended both by Mr. Trye and Dr. Hull in phlegmatia dolens; but I think it is a remedy from which no benefit is likely to be derived, and particularly in debilitated habits.

Our attention is next to be directed to the local treatment. When the limb and labium pudendi are occupied by much pain, and any degree of inflammation, the application of two or three leeches will be proper; after which the parts may be well fomented with flannel cloths wrung out in hot vinegar, renewing these as often as they become cold. This simple mean, unassisted by any other than merely keeping the bowels regular, with gentle aperients such as the neutral salts, has, I understand, been adopted in all cases of phlegmatia dolens, with invariable success, in one of the best regulated lying-in hospitals in London. Should it fail however in other hands, some more powerful sedative, or discutient, may be substituted, such as a solution of muriated ammonia in vinegar, or a diluted solution of the aqua lithargyri acetata. A liniment composed of a drachm of camphor dissolved in an ounce of olive-oil, with about ten grains of powdered opium, and used night and morning, will be a good application. Much relief has been received by surrounding the limb with a soft poultice, composed of bran, olive-oil, with the addition of half an ounce of tinctura opii, and a sufficient quantity of warm water to give it a proper consistence, renewing it morning and night.

To lessen the effusion of fluid in the limb, a tight bandage of flannel ought to be worn constantly round it, and much standing or walking carefully be avoided. The application of a blister to it might possibly drain off some of the accumulated fluid; but neither punctures nor scarifications have proved very beneficial; for in some instances coagulation quickly succeeds the effusion. To increase the action of the absorbents in the limb, frequent frictions with rubefacient liniments, or simply with the hand, flannel, or a flesh-brush, may be employed, the effects of which may be assisted by topical cold bathing, or by cold water, fresh or salt, dashed upon the parts, and by electricity. Probably the application of heat in the manner advised for anasarcous limbs, might also prove serviceable. See Anasarca.

OF AN INFLAMMATION OF THE UTERUS,* OR HYSTERITIS.

In natural labours, as well as in those of a difficult sort, many causes of injury to the uterus and the peritonæum which covers it, will be applied. The long-continued action of the uterus on the body of the child, and the great pressure made by its head on the soft parts, will further add to the chance of injury. Besides these, an improper application of instruments, or an officiousness of the midwife in hurrying the labour or extracting the placenta, may have contributed to the violence. To these causes may be added exposure to cold, by taking the woman too early out of bed after delivery, and thereby throwing

* This disease, as well as the two which succeed, belong properly to the class of Pyrexia; but as the two first do not often occur in the unimpregnated state, and the last is a disease confined to the puerperal state, I have judged it most proper to insert them all here.

the circulating fluids upon the internal parts, putting a stop to the secretion of milk, or occasioning a suppression of the lochia.

An inflammation of the womb is sometimes perfectly distinct, but it is more frequently communicated to the peritonæum, Fallopian tubes, and ovaria; and having once begun, the natural functions of the organ become much disturbed, which event greatly adds to the disease.

It is oftener met with in women of a robust and plethoric habit than in those of lax fibres and a delicate constitution, particularly where they have indulged freely in food of a heating nature, and in a use of spirituous liquors. It never prevails as an epidemic, like puerperal fever, for which it has probably often been mistaken; and to this we may with some reason ascribe the difference in the mode of treating the disease which has taken place among physicians.

An inflammation of the uterus shews itself usually about the second or third day after delivery, with a painful sensation at the bottom of the belly, which gradually increases in violence without any kind of intermission. On examining externally, the uterus appears much increased in size, is hard to the feel, and on making a pressure upon it, the patient experiences great soreness and pain.

Soon afterwards there ensues an increase of heat over the whole of the body, with pains in the head and back, extending into the groins, rigors, considerable thirst, nausea, and vomiting. The tongue is white and dry, the secretion of milk is usually much interrupted, the lochial discharge is greatly diminished, the urine is high-coloured and scanty, and if the inflammation has extended to the bladder, it becomes totally obstructed; the body is costive, and the pulse is hard, full, and frequent.

These are the symptoms which usually present themselves when the inflammation does not run very high and is perfectly distinct; but when it is so extensive as to affect the peritonæum, those of irritation generally succeed, and soon destroy the patient.

Uterine inflammation is always attended with much danger, particularly where the symptoms have run high, and the proper means for removing them have not been timely adopted. In such cases, it may terminate either in suppuration, scirrhus, or gangrene and mortification.

Frequent rigors, succeeded by flushings of the face, quickness and weakness of the pulse, great depression of strength, delirium, and the sudden cessation of pain and soreness in the region of the abdomen, denote a fatal termination: on the contrary, the ensuing of a gentle diarrhœa, the lochial discharge returning in due quantity and quality, the secretion of milk recommencing, and the uterus becoming gradually softer and less tender to the touch, with an abatement of heat and thirst, prognosticate a favourable issue.

When shiverings attack the patient after several days continuance of the symptoms, but little relief can be afforded by medicine, the event being generally fatal. In this case, the woman emaciates, and loses her strength, becomes hectic, and sinks under colliquative sweating or purging.

Upon opening the bodies of women who have died of this disease, and

where it existed in a simple state, little or no extravasated fluid is usually to be met with in the cavity of the abdomen. In some instances, the peritonæal surfaces have been discovered free from the disease; while in others that portion which covers the uterus and posterior part of the bladder has been found partially inflamed. The inflammation has been observed in some cases to extend to the ovaria and Fallopian tubes, which, when cut open, are often loaded with blood. The uterus itself usually appears of a firm substance, but is larger than in its natural state, and when cut into, a quantity of pus is often found. Gangrene and mortification are seldom if ever to be met with.

By an early attention to the disease on its first approach, we may often subdue it, and prevent the inflammation from proceeding to any great height. Our immediate and speedy care ought therefore to be directed towards diminishing the quantity of the circulating fluids, and weakening the action of the heart and arteries; and this is to be done by drawing blood from the system, regulating the quantity which we take away by the violence of the symptoms, the state of the pulse, and the age and habit of the patient. In repeating the operation, we are to be governed by the same circumstances, and by the effect produced by the former evacuation. In plethoric habits a second or a third repetition may be necessary; but in those who are less robust, if the inflammatory symptoms are not entirely carried off by the first bleeding, it may be more advisable to draw off blood by the application of six or eight leeches to the belly, than to make use of the lancet again.

To remove the tension and alleviate the pain and soreness, flannel cloths wrung out in a warm decoction of bruised poppy-heads and camomile-flowers, with an addition of about an eighth of spiritus camphoratus, may be kept pretty constantly applied, throughout the course of the day, to the abdominal region, and at night it may be anointed with a little of the linimentum camphoræ. In using fomentations, due care must, however, be taken that they are not applied so wet as to run about the bed, and thereby occasion inconvenience to the patient.

Evacuation by purging would be improper in this inflammation; but it will be right to preserve the regular motion of the bowels by giving from time to time, as may be found necessary, some gentle laxative, or by administering emollient aperient clysters, which perhaps may be the preferable way of procuring stools, as they not only unload the intestines, but likewise act as fomentations.

In most internal inflammations, blisters prove a useful remedy; but in that of the uterus, their application is attended with the risk of increasing the irritation in the system, and of adding to the inflammation, by affecting the bladder and kidneys. Whenever they are made use of in this disease, with the hope of affording relief, they ought to be sprinkled with camphor, and the patient should drink plentifully of diluting mucilaginous liquors, to guard against such consequences. Diluents will indeed be proper, whether we have recourse to blistering or not.

To determine to the surface of the body, and excite a gentle perspiration, which often proves highly serviceable in this inflammation, it will be

advisable to give diaphoretic medicines. As such, we may employ the pulvis ipecac. composita in the quantity of eight or ten grains, repeated every four hours; or the pulvis antimonialis, in the quantity of about two grains, and half a grain of opium, made into a bolus, with a little of the conserva rosæ rubræ. These may be washed down with two or three spoonfuls of a saline mixture.

In order to alleviate the pain (which alone would greatly aggravate the disease,) procure rest, and prevent symptoms of irritation from arising, the use of opium is indispensably necessary, and its dose ought to be increased until the desired effect is procured.

Opium is however not to be prescribed in hysteritis until the inflammation has been subdued by venesection and aperient medicines.

Should a diarrhœa arise spontaneously in the course of this disease, it ought by no means to be checked, unless it proceeds with such violence as to exhaust the woman's strength. Under such circumstances the mistura cretacea, with an addition of a small quantity of tinctura opii, may be given with advantage. Should the remedy not be found sufficiently powerful in lessening the number of evacuations, three drachms of the tinctura kino, or catechu, may be added to about six ounces of the mixture.

Where the inflammation has extended to the bladder, and occasioned a suppression of urine, we must employ the catheter.

Throughout the whole course of the disease, the patient is to be supported by food of a light nutritive nature, and such as is easy of digestion, carefully avoiding all kinds of fermented liquors.

In chronic inflammation of the uterus or state of scirrhosity, the repeated application of several leeches above the pubes or to the perinæum, the use of gentle laxatives, emollient clysters, and fomentations and blisters to the lower part of the abdomen, with an antiphlogistic regimen, appear to be the most probable means of affording relief at an early period. Hyoscyamus and cicuta, joined with the Peruvian bark, and opiates, to assuage pain, together with injections of tepid water and milk, and frequent warm bathing, may be the most advisable remedies in the advanced stage of a scirrhosity of the uterus. I do not think that a use of mercury in any form would prove beneficial in this stage; but, on the contrary, highly prejudicial. At the commencement, small doses of calomel might, perhaps, be administered with some advantage.

Too much caution cannot be observed by women in guarding against any exposure to cold after delivery, as they are thereby apt to bring on diseases which, if they do not prove quickly fatal, not unfrequently leave effects behind them, of which they will be sensible the whole future period of their life.

OF AN INFLAMMATION OF THE PERITONÆUM, OR PERITONITIS.

THE peritonitis of the puerperal state appears to be only the common inflammation of the peritonæum attacking a woman already labouring under debility, and being somewhat conjoined thereby with puerperal fever.

Peritonæal inflammation frequently occurs in women after delivery,

and is produced by the same causes which give rise to an inflammation of the uterus, viz. tedious and difficult labours; officiousness in the midwife; the use of instruments; the application of cold, and administering heating liquors to excess. The disease has by some authors been called puerperal fever; but this seems improper, as it neither is attended with contagion nor ever prevails epidemically; and therefore the term is more properly applicable to the disorder treated of under that particular head.

In some cases of peritonitis the inflammation attacks only a small portion of the membrane at first, and is afterwards communicated to the whole of it; and in others it occupies the whole at once. The patient usually is seized with rigors and shiverings, thirst, fever, and an accelerated pulse, and soon feels considerable pain with soreness, either in a particular part of the abdomen, or over the whole of it. The uneasiness and pain increasing rapidly, the abdomen becomes puffed up and swelled to a size nearly equal to what it was before delivery. From the inflamed state of the parts, and the exquisite pain which prevails, the very weight of the bed-clothes becomes irksome and insufferable; and in order to support it, the patient is obliged to lie on her back with her knees bent in towards her belly. She is moreover incapable of bearing the least motion.

The stomach in most cases is much affected, and a constant sickness with a vomiting of bilious matter ensues. The state of the intestines is variable; sometimes costiveness prevails, at others a purging, and sometimes the body is perfectly regular. The bladder likewise becomes affected, and there arises a constant inclination to make water, but which comes away, however, in a very small quantity at a time.

As the disease advances and the tumefaction augments, great difficulty of breathing ensues; and in consequence of the general determination to the bowels, the secretion of milk becomes much diminished, and is at last entirely stopped; the breasts are flaccid and empty, and the lochial discharge is perhaps wholly suppressed.

The system is usually affected with a mixture of general inflammation, and symptoms of irritation; the pulse is frequent, small, and contracted, beating about 120 or 130 in a minute; the skin is dry and hot, with flushing of the face and redness of the eyes: the tongue is white and dry, with the prevalence of great thirst; the appetite is diminished, but not wholly lost: and the patient is restless, uneasy, and gets little or no sleep.

The disease continuing to proceed in its course, all the symptoms become highly aggravated, and at last a total cessation of pain ensues; the pulse becomes still smaller, but is at the same time more frequent; cold clammy sweats break out; the urine and fæces come away involuntarily; the extremities are cold, and the patient is carried off in the course of the sixth, seventh, or eighth day.

We may regard the following appearances in a favourable light: The pulse becoming fuller and less frequent, the skin moister and cooler, the respiration less laborious, the urine being voided in a proper quantity and less frequently, the return of the milk in the breasts,

the re-appearance of the lochial discharge, a gradual diminution of the pain and tension in the abdomen, with the ability of remaining in a sitting posture, and the coming on of a gentle diarrhœa towards the close of the disease. On the contrary, we are to consider the sudden cessation of pain, with a sinking pulse and much tumefaction, as fatal symptoms.

Peritonæal inflammation is to be distinguished from enteritis by the pain being permanent; by its being increased by pressure, even before any tension has taken place on the abdomen; by its producing no inclination to go to stool; and by its not being diminished if this evacuation should take place spontaneously.

The appearances on dissection have been those of inflammation in the peritonæum covering the different viscera, as the stomach, liver, spleen, omentum, intestines, &c.; but that which covers the uterus and bladder is usually found in a higher state of inflammation than any other part. Moreover, there is generally perceived in the cavity of the abdomen, a large quantity of a fluid resembling serum, mingled with pus, and intermixed with shreds of coagulable lymph, or portions of solid matter, similar to what is mentioned under the head of Puerperal Fever. It seldom happens that gangrene or mortification of any of the viscera is to be observed, but the intestines are usually greatly distended with air.

In the cure of this disease, nearly the same mode of treatment which has been advised for an inflammation of the uterus must be adopted. Bleeding from the system to about sixteen ounces should therefore be had recourse to at a very early period, particularly where the patient is of a robust plethoric habit, and with such it may be necessary to repeat the operation within twelve hours. In those cases where there is no mixture of phlegmonous inflammation with the symptoms of irritation, drawing blood a second time by the application of a dozen leeches applied to the abdomen, may be preferable to taking it away from the arm.

In the pure peritonitis, local blood-letting should never be solely trusted to, and indeed ought not to be advised until there appears some diminution of pain from general bleeding, or till the constitutional effects occasioned by the local inflammation are partly removed, and the disorder thereby reduced to a state more nearly approaching to a simple topical affection.

An occasional irregularity in the complaint sometimes occurs, which is liable to mislead the practitioner; and that is, at the very first attack there is sometimes so great a degree of prostration of strength, accompanied likewise by a pulse scarcely perceptible at the wrist, as might induce us to consider the patient nearly at the point of death, and unequal to undergo the treatment here recommended. These appearances, however, may be supposed to arise from the inflammation extending to the peritonæal coat of the stomach and intestines. Here the pain on pressure must be the chief criterion to determine our practice, and if it should be found exquisite, no accidental symptom should lead us from trusting chiefly to the lancet. Such a decision will soon be

justified by a freedom in the action of the arterial system, by an abatement of the languor, and by a diminution of the pain.

Emollient and antispasmodic fomentations composed of a decoction of equal parts of camomile-flowers, bryony, and bruised poppy-heads, with a small addition of alcohol or spiritus camphoratus, will be proper remedies in all cases of peritonitis, and ought therefore not to be neglected.

Under an apprehension that the application of a blister to the abdomen might prove injurious by its irritating effect, some physicians have objected to advise it in peritonitis, while others again have recommended it to be employed under the idea that its determining the inflammation to the external parts, and thereby lessening it on the internal ones, will greatly counterbalance any excitement it may occasion. When the constitutional effects occasioned by the local inflammation are partly removed by general bleedings, and the disorder is reduced to a state more nearly approaching to a simple topical affection, there can be no doubt, I think, of the propriety of blistering the abdomen.

If costiveness prevails, the bowels must be emptied by administering some mild laxative, such as the oleum ricini, or by means of emollient clysters, which, at the same time that they procure stools, will act as internal fomentations.

Should there prevail great irritation at the stomach, with frequent vomiting, the patient should be directed to drink freely of diluted mucilaginous liquors, taking every two or three hours a saline draught in the act of effervescence, with an addition of about twelve or fifteen drops of the tinctura opii.

In order to determine the circulating fluids to the surface of the body, and excite a slight degree of perspiration, we should administer small and repeated doses of some diaphoretic ;* and in order to procure sleep and alleviate pain, having previously bled sufficiently, we may make an addition of opium, increasing the quantity according to its effects. These may be washed down with two or three table-spoonfuls of the mistura camphorata, which will be likely to prove a serviceable medicine.

Where the urine becomes suppressed by the inflammation having extended in a high degree to the bladder, a warm bath, with an occasional use of the catheter, may be necessary.

In the early stage of the disease, where phlegmonous inflammation simply prevails, it might be of service to make use of nitre and other refrigerants ; but at a more advanced period, and where symptoms of irritation arise, they would be improper. When these ensue, the Peruvian bark, with a moderate quantity of wine, ought to be given. Should

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* ℞. Pulv. Antimonialis gr. ij.
Conferv. Rosæ gr. x. M.
ft. Bolus.

Vel

℞. Pulv. Jacob. Ver. gr. v.
Opii gr. ss.
Conferv. Rosæ q. s. M.

Vel

℞. Pulv. Ipecac. Comp. gr. x. pro dos.

the stomach not be capable of retaining the powder, a decoction or infusion may be tried, with a small addition of the tinctura columbæ.

If a gentle diarrhœa should come on in the course of the disease, it is by no means to be checked, unless when violent, as it may prove critical.

Throughout the whole period of the disorder the patient is to be supported by food of a light nutritive nature, administered in small quantities at a time, and repeated frequently, so as never to overload the stomach.

OF PUERPERAL FEVER, OR FEBRIS PUERPERARUM.

GREAT soreness and tension of the abdomen accompanied by fever, a tensive pain over the forehead, peculiar wildness of the eyes, depression of strength, anxiety, and a flaccid state of the mammæ, may be regarded as the pathognomic symptoms of puerperal fever.

It is a disease peculiar to women after delivery, and is supposed to occasion the death of nearly one half of those who die in child-bed. Until of late it had not been much noticed by medical writers, and even now various opinions are entertained with regard both to its nature and the causes producing it. Some have doubted if it deserves the title of specific, or ought to be regarded as of a particular genus; and these have been accustomed to look on it as only a simple modification of the known species of fever, taking its origin from the leaven of the prevailing epidemic constitution, whether inflammatory or putrid, modified by the habit of body, the mode of living, the age and temperament of the patient, the preceding causes, the season of the year, and temperature of the air, &c. Others again have considered the disease not as a fever, but as an inflammation either of the uterus, peritonæum, or omentum; and it is true, that in some respects it is analogous to these affections; yet there is still so material a difference in the nature of its attack, its general progress, the manner of its termination, and the treatment it requires, that there seems to exist an essential distinction between them.

A stoppage of the lochia has been assigned as one of the causes of puerperal fever; but the circumstance of their being sometimes absent, and sometimes present at the attack, and during the progress of the disease, shews their perfect independence of each other. Others again have thought that puerperal fever is produced by the absorption of a putrid sanies arising from dead parts of the omentum or mesentery, or some other putrid material in the abdomen or uterus.

By a few physicians it has been represented as owing its existence to an undue secretion of milk; while others have supposed that it derived its origin either from a redundancy, or too great acrimony of the bile, the secretion of which appears to be much interrupted during the time of gestation. The late Dr. Young, professor of midwifery at Edinburgh, was of opinion, that the puerperal fever, strictly so called, is in every instance the consequence of contagion: but he contends, that the contagious matter of this disease is capable only of producing its effects, in consequence of a peculiar predisposition given by delivery, and its consequences. In support of this doctrine he remarks, in a paper read in the Philosophical Society of that city, that for many

years the disease was altogether unknown in the lying-in ward of the Royal Infirmary at Edinburgh; but that after it was once introduced into the hospital, almost every woman was, in a short time after delivery, attacked with it; although, prior to delivery, she may have lain even for weeks together, not only in the same ward with the infected, but even in the very next bed. He further remarks, that it was only eradicated from the hospital in consequence of the wards being entirely emptied, thoroughly ventilated, and new painted. After these processes, puerperal females in the hospital remained as free from the disease as formerly.

The real cause of puerperal fever is obscure and not yet satisfactorily ascertained. It is, however, certain, that it has generally a strong tendency to the typhoid type, although at its commencement it is not unfrequently attended with inflammatory symptoms, and even with topical inflammation, particularly in the abdominal viscera. My own opinion is, that the disease is contagious, and that the fever which accompanies it, is the primary affection, while the appearances of the abdomen are symptomatic. It is, however, certain, that the combination adds greatly to the violence and rapidity of the disorder, as likewise to its fatal tendency.

The period at which women are attacked with this disease is uncertain, as in a few instances it has arisen at the distance of a week after delivery; but the most usual time of its attack is on the third or fourth day after that event. The patient is seized at first with a slight coldness and shivering, succeeded by pains in the head, ringing in the ears, flushings in the face, great anxiety and restlessness. As the disease advances, the whole abdomen becomes affected, is highly painful to the touch, and much tumefied. She likewise feels great pain in the back, hips, and sometimes in the legs, and she performs respiration with difficulty, the breathing being short and laborious, from the pressure against the diaphragm, as well as from an organic affection of the chest itself. If the milk has been previously determined to the breasts, it suddenly disappears on the approach of the disease; but if the attack of fever commences sooner, the milk does not appear. The lochia are altered both in quantity and appearance; the urine is turbid, small in quantity, and voided with pain, and a tenesmus often arises. The skin is hot and dry, the pulse weak and frequent, the number of pulsations being often from 110 to 130 in a minute; thirst prevails, and there is vast prostration of strength, with anxiety, depression of spirits, a disinclination to suckle, carelessness about her child, and watchfulness. To these symptoms are added a tensive pain over the forehead, and a peculiar wildness of the eyes.

A vomiting not unfrequently attacks at the same time, and in so high a degree as to prevent the smallest quantity of food or medicine from being retained on the stomach. The matter thrown up is of a dark porraceous colour, and often of a disagreeable smell. The functions of the primæ viæ are likewise much disturbed. At the commencement, they usually go on well; but in the progress of the disease, a severe purging often ensues, particularly in those cases where the abdomen has

been much distended. It seldom happens that any violent delirium arises, but the patient is apt to fall into a low comatose state, wishing by no means to be disturbed.

After a few days continuance of these appearances, the fever often acquires a putrid tendency, particularly in hospitals and confined situations, or when the state of the atmosphere predisposes to diseases of that nature; the lips, teeth, and tongue are covered with a dark brown fur; aphthæ beset the whole internal surface of the mouth, tongue, uvula, tonsils, and pharynx; the breath is highly offensive; the stools are fetid, of a dark brown colour, and pass off involuntarily; and in a few cases purple spots appear on different parts of the body.

Such in general is the course of a puerperal fever; the symptoms of which, however, may be often varied, according to the constitution of the patient, the degree of the disease, and its earlier or later invasion.

The puerperal fever is readily to be distinguished from that affection known by the name of after-pains, by the intervals of ease which attend these last, and by the absence of fever and abdominal tension; whereas in the former there is fever with its concomitant symptoms; great soreness and swelling of the abdomen, and an almost uninterrupted continuance of pain throughout the course of the disease.

Many circumstances evince a dissimilarity between the puerperal and miliary fevers, notwithstanding the symptoms of anxiety and oppression are common to both. In the puerperal fever the rigor is more violent, of longer duration, and not interrupted, as in the other. The pulse at first is fuller and stronger; the skin is more hot; and the tongue, whether moist or dry, though generally the latter, is not of a white but brownish appearance.

Peritonæal inflammation is the disease which bears the strongest resemblance to puerperal fever, but it never arises from contagion, or prevails epidemically.

The progress of a puerperal fever is sometimes so very rapid, particularly in warm climates and hot seasons, as to destroy the patient in 48 hours. Even in cases seemingly the most favourable, we should look on the event as doubtful, as the complaint is apt to be accompanied with delusive remissions, and indications arise in its progress, which are by no means equal to the danger. The risk seems however to be greater in proportion as the accession is sooner after labour. When the disease comes on at a late period after delivery, the depression of strength is usually less considerable, the tumefaction of the abdomen is less extensive, and the other symptoms are not so violent, and consequently there will be a greater chance for the woman's recovery.

The re-appearance of the lochia and a gradual subsidence of the abdominal tension, and soreness after copious stools, with a moist skin, may be regarded in a favourable light. On the contrary, an extensive swelling of the belly, so as to sound on striking it with the fingers, sudden cessation of pain, irregularity in the pulse, coldness in the extremities, clammy moisture diffused over the whole body, dark-coloured and fetid evacuations by stool, and an indifference to all external objects, denote certain and speedy death.

On a fair computation, three fourths of the women who have been attacked with this disease, have fallen sacrifices to it.

The morbid appearances observed on dissection are usually confined to the abdomen. The first thing that often presents itself is a collection of fluid in the cavity of the abdomen, which is sometimes so considerable in quantity, as to amount to several quarts; and it has a peculiarity of smell different from any other fluid to be met with in the human body, either in health or disease. Where it is large in quantity, the surfaces of the different viscera, and of the peritonæum, will usually be found covered with a crust formed of a solid part of this matter, resembling coagulated lymph. If there be any interstices between the intestines, or the other viscera, they are frequently filled with large masses of the same, adapted exactly to the shape and size of such interstices. In a few cases, a deposit of a caseous and serous nature has been discovered likewise in the head, breast, and external cellular membrane, as has before been observed. In most instances there is found a slight degree of inflammation in some part of the cavity; but it is not confined invariably to any particular place; as the uterus, ovaria, peritonæum, omentum, intestines and bladder, have all in their turn been observed in a state of inflammation. In many cases of dissection, a considerable quantity of purulent matter has been found in the cavity of the abdomen.

In a disease where the symptoms come on with such violence, where the progress is so very rapid, and the event so generally fatal, every assistance should be afforded as soon as possible. Unfortunately, however, there has prevailed a great diversity of opinion among physicians relative to the remedies to be employed during its first stage, some advising copious bleeding, and others highly disapproving of its being ever adopted. Under such a contrariety of opinion, which can only be accounted for by presuming that other complaints, such as an inflammation of the uterus or peritonæum, &c. have been mistaken for this, it will be best to pursue that plan which seems most congenial to the nature of the disease.

I shall consider puerperal fever as admitting of the same variety of treatment with other affections depending on contagion, in which an inflammatory disposition may prevail on its first attack; but in which a putrescent tendency is more likely to be observed, particularly after a few days continuance.

If puerperal fever has arisen in a strong plethoric habit, either in consequence of a laborious delivery, or forcible means having been used, and where no epidemic constitution of the atmosphere to low fever prevails, but where evident signs of inflammation exist, we may then venture to recommend early bleeding, proportioning the quantity that is taken away to the violence of the symptoms, and the strength of the patient; but under no other circumstances can it ever be advisable; as in divers instances, bleeding from the system has been attended with manifest disadvantage. It has in a few cases diminished the pain for a short time perhaps, and the buffy appearance on the blood drawn off, has been supposed to justify the operation; but it generally reduces the patient extremely, and often hastens her death.

The commencement of puerperal fever, it must be acknowledged, is frequently marked by features more strikingly phlogistic than those we meet with in most fevers, and we should be prepared to expect those appearances even in habits of extreme delicacy of fibre; but yet the employment of the lancet appears rather a hazardous experiment; for after the third or fourth day there is usually a great prostration of strength, and a tendency in the disease to degenerate into typhus.

When there is much local pain, and it is judged absolutely necessary to take away blood in order to obviate inflammation, bleeding from the skin of the belly, by the application of six or eight leeches to that part of the abdomen which appears to be most affected, might perhaps be preferable to drawing blood from the arm, as it will not produce the same degree of debility. In some countries, the application of leeches to the vagina or hæmorrhoidal veins has been considered as the most effectual mode of bleeding in this disease.

It often happens that nausea and a vomiting of bilious matter attend an attack of this fever. In such cases, we may recommend a gentle emetic of ipecacuanha to be taken, with a view of cleansing the stomach; but I cannot agree with those who advise a repetition of it day after day, as has lately been practised by Dr. Doulcet of the Hotel Dieu at Paris, and others; as the operation of vomiting never fails to aggravate the pain, and likewise to exhaust the woman, besides endangering a great degree of irritability in the stomach, to which there is naturally too great a tendency.

The propriety of administering purgatives in puerperal fever has admitted of as much doubt as that of venesection. Some physicians, observing that women who die of this fever, are generally molested with a looseness, have been induced to consider this symptom as of the most dangerous and fatal tendency, and which ought to be restrained by every possible means; whilst others, again, have regarded it rather as critical than symptomatical, and think it ought, therefore, to be moderately supported, instead of being restrained. To procure stools where costiveness prevails, and remove putrid feculent matter, it appears reasonable that we might employ laxative medicines at the commencement of the disease with advantage; and possibly a few grains of calomel with a small quantity of rhubarb would best answer these ends. Where the disease is in an advanced stage, and the patient reduced in strength, dislodging the contents of the intestines by means of aperient clysters, appears to me to be the best mode, however, of procuring evacuations.

A very interesting account of a puerperal fever which was epidemic at Aberdeen, and published by Dr. Alexander Gordon, gives us to understand, that not only purgatives are useful in this disease, but likewise bleeding. He tells us that the disease was infectious; that it seemed to arise from the contagion that was carried by the accoucheur, or nurse, from one lying-in woman to another; and that it began with violent unremitting pain of the abdomen on the day of delivery or the next, with shuddering, and a very quick pulse, often 140 in a minute. If he saw the patient within 12 or 24 hours of her seizure, he took away from 16 to 24 ounces

of blood, which was always sizy. He then immediately gave a cathartic consisting of calomel and jalap. After this had operated, he prescribed an opiate at night, and so continued the purge and the opiate for several days.

He asserts that almost all those whom he was permitted to treat in this manner early in the disease, recovered, to the number of fifty, and that almost all the rest died; but that when two or three days were elapsed, the patients became too weak for this method; and the matter was already formed, which destroyed them.

Although I object to a repetition of antimonials, or ipecacuanha, given so as to produce an emetic effect, still I think they may be administered with some advantage at the commencement of puerperal fever, in small doses, so as to determine to the surface of the body. As a diaphoretic, I know of none preferable in the present instance to ipecacuanha, which may be prescribed in doses of about two grains, to be repeated every three or four hours; or perhaps it may be still more efficacious to give it combined with opium, as in the pulvis ipecacuanhæ compositus. Of this about six grains, made into a bolus with a small quantity of conserve of roses, may be taken as before mentioned, washing it down with a saline draught; and to make their diaphoretic effect the more certain, the patient should drink frequently of diluting liquors, such as whey, barley-water, &c.

To alleviate the soreness and distention of the abdomen, we may recommend the application of fomentations both inwardly and externally; inwardly, by injecting emollient clysters from time to time; and externally, by applying flannel cloths wrung out in a warm decoction of equal parts of camomile flowers and bruised poppy-heads, with an addition of about one third of alcohol, over the whole region of the abdomen; and these ought to be renewed as often as they become cold, taking due care that they are not so wet as to run about the bed and incommode the patient.

The warm bath has been recommended by some practitioners, and it often produces a calm and disposes to sleep; but this being the effect of exhaustion, it appears to be an improper remedy.

If the soreness and pain are not relieved by the means which have been suggested, then the application of a blister to the upper part of each thigh may be proper. Blistering the abdomen would not be advisable for the reasons already assigned under the head of Peritonæal Inflammation.

Having employed gentle cathartics at an early period for the purpose of obviating costiveness and dislodging the putrescent matter from the bowels, we may then with safety have recourse to opiates, administered so as to keep up a constant effect.* The dose of opium must depend

* ℞. Aq. Cinnam. ℥j.
Tinct. Opii gutt. xv.
Syr. Althææ ℥ij.
Tinct. Lav. C. ℥j. M.
fℓ. Hauſtus.

on the severity of the pain, and the age and constitution of the patient, and it may be repeated every four or six hours.

Opium, when administered in puerperal fever, diminishes the irritability of the system, as well as that of the stomach and intestines. It eases pain, produces sleep, and seems to excite a moderate diaphoresis. In a few instances, I think, I have observed it to obviate or relieve delirium in the same manner as in typhus.

Should there be any great irritation of the stomach, that prevents either the medicines or nutriment from being retained, the saline medicine, with a proper quantity of tinctura opii, may be given, so as that the effervescence will take place after it is swallowed, as advised under the head of Simple Fever; and the strength must be supported by administering clysters composed of animal broths and other such nutritive liquids.

If a gentle purging arises in the first stage or commencement of the complaint, it ought not to be too hastily stopped, as the fever has in some instances been carried off by such a spontaneous evacuation; but if the disease is of some days standing, the stools very frequent, and the patient much reduced, we must then give astringents,* joined with opium; and for ordinary drink, she may take the decoctum cornu cervi, with about half an ounce of gum arabic dissolved in every pint. To support the strength, wine will be necessary; and this may be given diluted with water, as likewise mixed with the food, which should consist of preparations of barley, sago, panado, Indian arrow-root, tapioca, and the like, varied now and then for broths and beef-tea.

It has been observed that this fever, after continuing a few days, very often acquires a putrid tendency. Under such circumstances it will be right to have immediate recourse to the Peruvian bark joined with the mineral acids, but more particularly the muriatic, as noticed under the head of Typhus Gravior, and to exhibit it freely in as large doses as the stomach will bear. If the powder is readily retained, it ought to be preferred to any other preparation of the bark; but if not, a decoction or infusion may be substituted. Should it be rejected in all these ways, it may then be given in clysters, with an addition of about five-and-twenty drops of tinctura opii to each. If it occasions any purging when taken by the mouth, a few drops of the tincture of opium may be added to each dose.

When there is no disposition to a putrid tendency it will be best to wait

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* ℞. Confect. Opiat. ℈ss.—℈j.
Aq. Cinnam. ʒjss.
Tinct. Kino ʒij.
Tinct. Lav. C. ʒj. M.
ft. Hauſtus ter in die ſumendus.

Vel

℞. Miſtur. Cretac. ʒiij.
Aq. Pimento
—— Cinnam. āā ʒij.
Extract. Lign. Campech. ʒss.
Tinct. Catechu ʒij.
—— Opii gutt. lx. M.
ft. Miſtura cujus ſumat Cochl. ij. quarta quaq. hora.

till a remission of the symptoms, or a partial subsidence of febrile action, has taken place, before we prescribe a use of the cinchona.

A physician of eminence,* in treating on this disease, observes, that the bark, although given by him in the different stages of the complaint with remissions tolerably distinct, by no means answered the intention as a febrifuge: but that in a few cases where the intermissions were complete, it had succeeded. He likewise observes, that, as a supporter of the general strength, it has been found of less service than might have been expected, on account of the disturbed and very irritable state of the bowels, which it has a tendency to increase. Instead of bark, he advises the columbo root† in powder or infusion, in doses to be repeated every four hours.

If hiccups and subsultus tendinum arise in the progress of the disease, recourse must be had to antispasmodics, such as musk, æther, castor, and the like; although it is probable they will avail but little. When any unusual coldness of the extremities is felt, the application of stimulating cataplasms will be proper.

The carbonat of potash, or salt of tartar, is a medicine which is strongly recommended by Monsieur Guinot‡ in puerperal fevers, as well as in all diseases connected with the secretion of milk in the female breast. He advises it to be given in doses of from ten or twelve grains three times a day, in any proper vehicle, and to employ at the same time alkalies externally, such as a solution of soap in a decoction of poppy-heads, taking care at the same time not to neglect other remedies indicated by the circumstances and symptoms of the case.

This alkaline treatment he recommends under the idea that the disease is occasioned by the predominance of an acid. Whether it acts by counteracting the acid, dissolving the clotted milk; by neutralizing the acid which may actually exist there; by its action on the organs of perspiration, or by inducing other useful crises, cannot be ascertained; but it appears to have proved very successful and advantageous with many other practitioners besides Monsieur Guinot, and ought therefore never to be omitted at an early period of the disease. A combination of the carbonat of potash with the Peruvian bark might most probably be particularly useful in cases of puerperal fever complicated with malignancy.

To prevent the disease from occurring, it will be proper to keep the patient's mind, both before, during the time of labour, and afterwards, as free from every kind of uneasiness as possible, as anxiety might greatly predispose to an attack of it. She should likewise carefully

* Dr. Denman.

‡ See Extracts from his Memoir inserted in the third volume of the Medical and Physical Journal, pages 80, 165, 264, and 363.

† ℞. Pulv. Columb. 3ſs.
Opii gr. ſs.
Conferv. Roſæ q. s. M.
ft. Bolus.

avoid any exposure to the infection of fever before delivery, as well as to the occasional causes of it afterwards. Every woman lately delivered ought cautiously to guard against cold; but in doing this, her room should at the same time be kept of a proper temperature by allowing a sufficient ventilation.

It being a well-known fact that puerperal fever has been chiefly confined to close apartments and small hospitals, and that since the lying-in chambers have been made more airy and commodious, and the hospitals larger, the disease seldom prevails epidemically or becomes general, due attention should be paid to a free ventilation; for it is by no means improbable that a cool air in a lying-in chamber will frequently prevent, and its opposite very frequently induce, the phenomena of puerperal fever.

The patient should observe the strictest cleanliness both as to herself and the bedding. On the coming of the milk, her breasts ought to be drawn repeatedly throughout the course of the day by some person accustomed to the business, or by applying the child; her body should be kept perfectly open, and she should abstain from all food of a heating or irritating nature.

An upright posture will be most proper, in order to discharge more readily any putrescent matter that may be in the uterus.

When the disease prevails as an epidemic among puerperal women, or occurs in a lying-in hospital, all communication ought immediately to be cut off between those who are infected and such as have lately lain in, or expect shortly to do so; and in order to root out the disease and stifle contagion, we should have recourse to fumigations, as advised under the heads of Malignant Fever and Dysentery, together with painting, whitewashing, and a free ventilation.

In situations where puerperal fever has been prevalent, some advantage may be obtained by giving a decoction of the bark with tincture of opium and cordials immediately after delivery. These will in some measure enable lying-in women to resist the powers of contagion.

Of the DISEASES of INFANTS.

MUCH attention and experience are required to treat the diseases of infants judiciously; close and repeated observation being the principal means of supplying the want of that kind of assistance which the personal information of adult patients generally affords. The disorders of early infancy are, however, more obvious than has been generally supposed; their number is comparatively small; their causes are uniform; and the treatment of most of them is simple and pretty certain.

Improper food, confined and unwholesome air, the want of due exercise and cleanliness, difficult dentition, and unhealthiness of the parents, are the most general causes of the diseases of infants. Others have indeed been enumerated both by ancient and modern writers, such as their general laxity, the greater irritability of their nervous system,

and the delicacy of their muscular fibres, which may indeed be considered as so many predisposing causes.

The symptoms of the first diseases of infants (by which we also judge of their nature) are chiefly retention and excretion, sour belchings, sickness, vomiting, purgings, inquietude, crying, wakefulness, heaviness, loathing of food, contractions and sharpness of the features, blueness about the mouth, turning up of the eyes, sudden startings from sleep, thirst, heat, the manner of breathing and of crying, retraction of the lower extremities, hardness and distention of the belly, and pustules or eruptions external or internal. To these may be added, the openness or firmness of the fontanelles and of the sutures, the strength and figure of the bones, and the relaxation or contraction of the skin in general, and of the scrotum in particular. The pulse and urine are less certain marks, in the greater number of their complaints, than they are in older children and adults.

Having thus briefly noticed the causes and symptoms of infantile diseases in general, I shall proceed to consider each separately. Small-pox, chicken-pox, measles, scarlatina, and such other eruptive diseases, together with croup, hydrocephalus, ophthalmia, hooping-cough, scrofula, rickets, tinea capitis, worms, and a great many other diseases, being equally liable to attack children of a maturer age, have already been noticed in the preceding pages of this work, in the class or order to which each belongs.—See the Index.

As it is always more desirable, as far as we are able, to prevent diseases, rather than to cure them, and to obviate the causes rather than to remove their effects, I beg leave, previous to my entering on the treatment of infantile diseases, to offer a few observations on the diet and proper management of young children.

During the first months of a child's life, the milk of its mother is unquestionably preferable to every other kind of nourishment, and even to the milk of another woman, provided the parent is in good health, and labours under no constitutional imperfection of importance. As, however, it is usually more convenient, and at times absolutely necessary to bring up the child partly by the hand, as it is called, at the same time that it sucks, we should be careful to regulate the diet both with regard to quality and quantity, that its stomach may neither be disordered with what is improper, nor be oppressed with excess. The food which is prepared by art should be thin and liquid, and be made fresh every day. It is to be offered to the infant frequently, by little at a time, and at proper intervals, and not to be crammed down its throat as often as it awakes from sleep, or cries, as is the custom with many nurses. Instead of a spoon, a horn or glass bottle covered with parchment, and perforated, so as to imitate a nipple, may be used. This gives occasion to some little exertion in sucking, imitative of what we see in nature, and is moreover attended with the advantage, that the infant will not be gorged, or induced to take more than it really wants.

At first it will be sufficient to give infants occasionally along with the breast a little milk and water warmed to the temperature of the

mother's milk, with a very small proportion of sugar, or we may substitute thin gruel or barley-water, mixed with milk, which may occasionally be changed for thin pap made with bread or biscuit, with a due proportion of fresh milk; but all these should first be passed through a lawn sieve, to insure their being thin and smooth.

At the end of five or six months the diet may be made a little stronger, consisting of plain mutton-broth or beef-tea, and occasionally some light pudding may be allowed. About the eighth or ninth month, a small portion of animal food which is easy of digestion may be given, particularly if nature has pointed out its propriety by early dentition.

If teething commences soon, and goes on well, the infant may be weaned at about nine months old; but if dentition is late, or accompanied with much irritation, it may continue at the breast for a whole year, provided the health of the mother will admit of it, or that she is not again pregnant. When the child is weaned, any kind of light plain animal food may be allowed it once a day, with a due proportion of vegetables, consisting principally of the farinacea, as flour, rice, sago, &c. The best drink will be plain water.

The practice of swathing infants with many bandages is now judiciously laid aside, and deformity as a consequence of dressing or clothing children improperly, is rarely to be met with. The rule to be observed with respect to the article of dress, ought to be, that a child have no more clothes than are necessary to keep it warm, that they sit easy and loose on its body, and that they be changed frequently, especially when they happen to be wetted. Dirty clothes not only gall and fret the tender skin of infants, but likewise give them an unpleasant smell, and are apt to produce cutaneous disorders, if not vermin; whereas cleanliness, assisted by gentle friction with the hand over every part of the body morning and night, together with proper ablutions with tepid or even cold water, tends greatly to preserve the health of children, and promotes perspiration.

In dressing the infant, if the nurse observes the skin any where chafed, after washing the parts, and drying them well, let her apply a little common hair-powder to it by means of a puff; but if much galled, which will sometimes happen at the time of teething, particularly in very fat children, from the heat and sharpness of the urine, let her bathe them with a wash composed of two parts of common water and one of spirits of wine, and afterwards sprinkle them with a little ceruss or fuller's earth, powdered very fine.

A young child should be amused through the day, and not suffered to sleep much during that time, that it may get the more rest by night. It should be early accustomed to be much in the open air; and as it is incapable of any exercise of itself, it should be the business of its nurse or other attendant to toss it well about in her arms from time to time. If the season of the year will admit of it, bathing it frequently in cold water will very much tend to strengthen and invigorate it.

The chamber which is appropriated for the nursery should be roomy, and it ought to be kept remarkably clean, sweet, and properly ventilated.

OF ASPHYXIA.

The apparent cessation of life in new-born infants may be owing to various causes, such as universal weakness of the vital powers, collections of glairy matter in the vesicles of the lungs, the introduction of a quantity of the liquor amnii into the trachea, and a congestion of blood in the lungs arising either from the neck of the child being tightly encircled by the os uteri or navel-string, or from the head being long detained in the passage.

When universal weakness of the vital powers seems to be the cause, we must be cautious not to suffer any effusion of blood from the umbilical cord. The communication between the child and the mother should be kept up as long as possible; for which reason we should avoid any violent pulling at the cord, that the placenta may not be too soon detached; and we should likewise not be in a hurry to apply a ligature.

It not unfrequently happens after a tedious labour, that the child is so weak and faint as to shew little or no signs of life. In such cases, after cleansing it and wrapping it in flannel, we should stimulate its temples and nostrils with spirits of hartshorn, and rub its chest with brandy. If these means fail to excite the languid circulation, we should then introduce a pipe or catheter into its mouth, and thereby endeavour to inflate the lungs; which plan ought to be pursued for a considerable length of time, as there is great reason to suppose that many children might be saved were we to adopt the means which have been pointed out, and continue them long enough. Stimulating the intestinal muscles to contraction, by pouring cold water on the child's thorax, so that air may rush in by the glottis, may likewise be tried. Besides inflating the lungs and pursuing the other steps which have been mentioned, care should be taken that the child does not lose its heat; for which reason it will be advisable to put it into a bath of warm water, and while this is preparing, it may be enveloped in warmed flannel.

From what has been observed on galvanism under the head of Suspended Animation in consequence of Drowning, it is probable that this remedy might prove a valuable auxiliary in many cases of asphyxia.

Where a portion of the liquor amnii gets into the trachea, and produces asphyxia, or the mouth of the infant is discovered to be filled with a glairy matter, rendering the respiration difficult, sonorous, and rattling, we must not only rinse the throat of the child, but likewise place it in an attitude which will facilitate the discharge of the liquor. Having done this, we should endeavour to re-animate the infant, by inflating the lungs, and then pressing out the air, imitating in this way for a considerable length of time, the natural respiration.

If a congestion of blood in the lungs, from the causes before mentioned, has occasioned the suspension of life, the most proper step to be pursued will be to suffer a small quantity of blood to be lost from the end of the divided cord.

The same will be advisable after a tedious labour, where there is much stupor present, in order to lessen the determination of blood to the head.

Professional men being often called upon to give evidence before a court of judicature, in cases of supposed infanticide, it seems right to mention that much careful observation is required to discriminate between a child that is still-born, and one that has lived only a short space of time after its birth. Various appearances also, both internal and external, may be mistaken for marks of violent death. Even the swimming of the lungs in water, a test on which much reliance has been placed, is on many occasions found to be fallacious; for they will float in consequence of a putrefactive process having commenced, as well as when filled with air by respiration.

It may likewise happen that an unmarried woman, on coming to her full time, and having concealed her condition, may be taken ill when by herself, and be delivered of a live child; but that, either from syncope ensuing speedily, or her being suddenly deprived of reason from a distracted state of mind owing to the sense of the shame which will attach to her foible, she may be so overcome as to be rendered incapable of assisting the infant, whereby it may suffer suffocation under the bed-clothes. In other instances, it may happen, that although the child is born alive, still, from some injury in the birth, its universal weakness, or some other obscure cause, it may soon cease to breathe, without receiving any intentional injury from its mother. No doubt occurrences of this nature do sometimes take place, and they clearly point out the impropriety of placing any reliance on the floating of the lungs in water, as a test of infanticide.

Justice undoubtedly requires from every medical practitioner that his evidence before a coroner or jury should be regulated by truth; but humanity and mercy dictate to him that he ought to have the fullest assurances of guilt before he gives an opinion that may deprive a fellow-creature of life. On all such occasions, he should recal to mind the Holy Text which tells us it were better that many guilty escape punishment, than that one innocent suffer. Those who wish to make themselves well acquainted with medical jurisprudence will derive full information from Dr. Hunter's Remarks inserted in the sixth volume of Medical Observations and Inquiries, p. 271; and from Dr. Farr's Translation of Joh. Fred. Faseli's Treatise on such Tokens in the human Body as are requisite to determine the Judgment of a Coroner and Courts of Law, in Cases of Divorce, Rape, Murder, &c. London, Becket, 1788.

A pleasing writer * informs us that at Copenhagen there is an hospital for the reception of pregnant women who have reasons for seeking concealment. They are received into it upon paying a small stipend; they enter at night in masks, and are never seen but by those who are necessary to their comfort, and even their names are not required. Since the establishment of this noble and humane institution, he gives us to un-

* See Carr's Northern Summer Tour.

derstand that there has been a very visible diminution in the crime of infanticide.

Much indeed it is to be regretted that no asylum on a similar plan is to be found by unfortunate females in our united kingdom, and that so many of them annually suffer an ignominious death, for laying violent hands on their offspring in the moments of shame, anguish, and despair.

ON THE BLACK OR LIVID COLOUR OF INFANTS.

It sometimes happens that immediately after the birth the face and neck of the infant put on a livid or black appearance, the lips become purple, and the breathing short; which symptoms either go off soon again, or terminate in death.

They are to be attributed either to some mal-formation of the heart or lungs, or to the vessels having imperfectly undergone those changes which are necessary for all animals who breathe the common air.

I know of no remedy likely to obviate these appearances.

OF A RETENTION OF THE MECONIUM.

A DARK-COLOURED viscid matter, known by the name of meconium, is contained in the bowels of all infants at their birth, and is usually discharged during the two or three first days in consequence of the milk of the mother, which is first secreted, being somewhat of an aperient nature.

In general this will be sufficient to bring off the meconium; but where it fails to do so in the course of a day or so, the aid of medicine may be necessary, and the best we can employ is about two drachms of the oleum ricini. Some give a solution of manna in water, or equal parts of oil of almonds and syrup. If these do not act readily, a clyster of thin gruel, with a little olive-oil and common salt, may be thrown up into the intestines.

The custom of drenching children with some drug or other the moment they are born, whether requisite or not, with the view of carrying off the meconium, is highly reprehensible, for in most cases the milk of the mother will of itself be amply sufficient.

OF THE YELLOW GUM, OR ICTERUS INFANTUM.

This is a species of jaundice, which affects many children at or soon after their birth, and which usually continues for some days.

It has generally been supposed to arise from an obstruction of the biliary ducts forcing the bile back upon the liver, from the meconium impacted in the intestines, or from mucus or viscid matter clogging the ductus communis.

The effects produced by it are, languor, indolence, a yellow tinge of the skin, bilious urine, and a tendency to sleep, which is sometimes fatal, where the child is prevented from sucking.

For the most part, the disease is easily removed by clearing the intestines by some mild laxative, such as the oleum ricini, where the mother's milk does not of itself prove sufficiently aperient.

The disease, in some instances, has been supposed to proceed from a viscid matter obstructing the gall-ducts. In these it may be necessary to give a gentle emetic consisting of a few drops of the tartarised wine of antimony, and on the succeeding day we may administer four or five grains of rhubarb. Should the yellowness continue after these means have been adopted, the emetic as well as the opening medicine may be repeated in the course of a few days. Dr. Underwood mentions that in those cases where an emetic has been objected to, and the attention devoted wholly to keeping the belly open, the yellowness not unfrequently will continue to the end of the month, accompanied with languor and other symptoms of debility.

We now and then meet with instances, where infants are affected with the true jaundice, distinguished by the skin being every where discoloured, as well as the whites of the eyes. Sometimes this appearance is of little importance, scarcely requiring any particular medical aid, and disappearing spontaneously; but in other cases, the infant appears to suffer much. In these, besides employing daily frictions to the stomach and belly, as well as a warm bath, we should administer saponaceous medicines and the aqua kali, &c. See Jaundice.

OF EXCORIATIONS AND ULCERATIONS.

From a neglect of proper cleanliness, children are very apt to become chafed in the wrinkles of the neck, behind the ears, and in the groins.

To remedy occurrences of this nature, it will be proper to bathe the excoriated parts twice or thrice a day with a little warm milk and water, and afterwards to sprinkle them with some absorbent powder, such as tutty or calamine, laying over all a bit of scorched linen rag. Where the excoriation is very considerable, a wash composed of two parts of spirits and one of common water, may be used. In obviating excoriations, we are however to be cautious in drying up discharges behind the ears in infants, as very bad consequences have been observed to ensue from making use of repellent applications in such cases.

In some children of a gross habit of body, and particularly about the time of teething, a species of excoriation extending low down in the neck is apt to take place, which at length degenerates into large deep sores, and not unfrequently is terminated in gangrene. Here fomentations of bark will be necessary, and we should at the same time administer its powder externally. Cases of this nature do not occur, however, very frequently.

Where ulcerations ensue, and they are large and painful, fomentations of white poppy-heads boiled in milk will be likely to prove beneficial. Should they shew no disposition to heal after such treatment, some mercurial application * may be made use of, and this may be laid on morning and evening spread on a bit of soft linen or fine lint. Where alteratives are thought necessary, small doses of calomel with the testacea may be given internally.

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* ℞. Calomelanos ʒj.
Unguent. Sambuci. ʒj. M.

HICCUPS.

Some infants are much incommoded by hiccups, and they arise probably either from acidity in the stomach, or from some nervous irritation. In the former case, a powder composed of a little prepared chalk and rhubarb (about eight grains of the former, with two or three of the latter) may prove beneficial. In the latter, it may be proper to give a few drops of the spiritus ammoniæ compositus, or the tinctura opii camphorata. In some instances, a little plain vinegar has proved an effectual remedy. Where the complaint is severe, or returns frequently, it may be advisable to rub the stomach with soap liniment, to which a little tincture of opium has been added.

OF THE INFANTILE ERYSIPELAS.

This is a very dangerous species of the spurious or erysipelatous inflammation, which is not often met with, however, but in lying-in hospitals. The ordinary time of its attack being a few days after birth, it was, at the first of its being observed, thought never to appear later than the month; but this has since been found not to be the case. It seizes the most robust as well as delicate children, and in a very sudden manner; the progress is rapid; the skin turns of a purplish hue, and soon becomes much hardened.

The milder species appears often on the fingers and hands, or the feet and ankles, and sometimes upon or near the joints; forming matter in a very short time. The more violent kind is generally seated about the pubes and extends upwards on the belly, and down the thighs and legs; though sometimes it begins in the neck, and is equally fatal. It seems indeed to be always less dangerous when confined to the extremities, than where it seizes on, or spreads to any other part of the body. The swelling is but moderate; but after becoming hard, the parts turn purple, livid, and very often sphacelate, especially in boys, when it falls on the scrotum; the penis swells, and the prepuce puts on that kind of emphysematous appearance, which it has been observed to do, when a stone sticks in the passage, or in the anasarca of the scrotum.

The disease often proves fatal in a few days.

Dissections of such children as have been destroyed by this disease have frequently discovered the contents of the abdomen glued together, and their surface covered with an inflammatory exudation, exactly similar to that found in women who have died of puerperal fever. In males, the tunicæ vaginales have been sometimes filled with matter, which has evidently made its way from the cavity of the abdomen, and accounts for the appearances of the organs of generation just now described. In females, the labia pudendi are affected in like manner; the pus having forced a passage through the abdominal rings.

We are informed by Dr. Underwood,* who since the days of Haller† seems to be the only physician that has distinctly noticed this

* See his Treatise on the Diseases of Children, page 33, vol. i.

† See his Chapter de Febre Erysipelacea.

complaint, that various means were made use of at the British Lying-in Hospital without success; though the progress of the inflammation seemed to be checked for a while by saturnine lotions and poultices, applied on the first appearance of the inflammation; but it soon spread, and a gangrene presently came on; or where matter had been formed, the tender infant sunk under the discharge.

On a further acquaintance with the disease, linen compresses wrung out of camphorated spirit, were applied in the place of the aqua lithargyri acetati, which we are given to understand have proved more successful in checking the inflammation in several instances. After the bark mixed with a little aromatic confection was made trial of internally, it appears that several children recovered. The cinchona ought therefore to be given as soon as possible either by the mouth or thrown up in a clyster, and we may add a little confectio aromatica to it.

Dr. Underwood observes, that in a few instances the disease has been attended with some varieties; for infants have not only come into the world with several hard and sublivid inflammatory patches and ichorous vesications about the belly and thighs, but with other spots already actually in a state of mortification. A large eschar has soon spread upon the spine of the tibia, with smaller ones about other parts of the legs, and on several of the toes and fingers. In such cases particularly he says, the bark and cordials must be exhibited liberally, and the inflamed and mortified parts be well fomented, and dressed with warm applications.

OF CUTANEOUS ERUPTIONS.

Children at the breast are very subject to slight eruptions, particularly during the first month; and these serve, no doubt, to relieve the body of some acrimonious humour. Of this kind is the red-gum, which consists in an efflorescence or small red spots, most usually confined to the face and neck, but in some cases extending to the hands and legs, and even over the whole body, appearing in large patches, and sometimes raised considerably above its surface. Now and then it shews itself in the form of small pustules, which are filled with a limpid, or sometimes a purulent or yellow liquor.

Every species of this eruption has generally been attributed to a predominant acid, but ought rather to be regarded as an exertion of nature to throw off something hurtful.

All that is generally necessary in this complaint, is to give a little magnesia, or testaceous powder, according to the state of the bowels, and to keep the child moderately warm; otherwise by the rash striking in, the acrimonious humour will fall on the first passages, and be succeeded by sickness and purging, till perhaps the eruption appears again on the skin. In cases of nausea at the stomach, or any disposition to fits upon this eruption being repelled, some light cordial, such as a few drops of the spiritus ammoniæ comp. may be given twice or thrice a day, and the child's feet, or perhaps the whole body, be put into warm water. The state of the skin and bowels has a peculiar consent; and on this account infants whose first passages have been frequently disordered, are always

benefited by eruptions on the skin. In such, peculiar care is therefore necessary to guard against their being repelled, as well as to invite their return.

Another species of eruption which is frequently to be met with in young children is that to which medical writers have given the name of crusta lactea, or lactumen. This often puts on a very unpleasant appearance, but is nevertheless of an innocent nature, and it has been observed that those children who have been much loaded with it, have usually been healthy, and have cut their teeth easily. A remarkable circumstance attending this eruption is, that, however thick and long-continued the scabs may be, the crusta lactea never excoriates, nor leaves any scar on the parts.

The crusta lactea appears first on the forehead, and sometimes on the scalp; and then often extends half way over the face in the form of large loose scabs, which, as the disorder increases, appear not very unlike the small-pox pustules after they have become dry. It begins with white vesicles larger than the itch, which soon become of a dark colour and then scab, with an efflux of ichor and great itching of the parts affected.

The rash generally disappears of itself when the child has cut three or four teeth, though it may sometimes continue for several months, and in a few instances even for years. In such cases, testaceous powders, calomel, and other alteratives, have usually been administered, but in general without success. The Harrowgate or other sulphureous waters might probably have a good effect. In very bad cases, a blister might prove serviceable.

During early dentition a rash very much resembling the measles is apt to make its appearance, and this usually continues very florid for three or four days, but it does not dry off in the manner of that disease. It is often preceded by nausea and vomiting, but is attended with little or no fever. During the continuance of the eruption, a few doses of the testaceous powders, with the addition of a little nitre, will be the most proper medicines; and when it disappears, some gentle laxative may be advisable.

Other rashes in which the spots are larger and often attended with some degree of fever (occasioned probably by the irritation of teething) are frequently to be observed during a more advanced stage of dentition, particularly while the double and eye teeth are cutting. These require only a proper attention to be paid to the state of the bowels, unless the fever is considerable; in which case we should pursue the steps recommended under the head of Dentition.

A slight species of essera or nettle-rash is another eruptive disease to which infants are liable; but this requires in general little attention, and often disappears in a few hours. When the body is much covered with eruptions, and they remain long out, attention should be paid to their not being repelled suddenly by any exposure to cold, or by any other improper treatment; but should they happen to strike in, we may then have recourse to the tepid bath and light cordials, in order to solicit their return to the surface of the body, which will be of the greatest consequence should the child suffer much from the repulsion.

An eruption very much resembling the itch is sometimes to be met with in infants at the breast; as likewise in children who have cut all their first teeth. It usually begins about the arms and thighs, but always spreads soon afterwards to other parts, and not unfrequently extends from the head to the feet. In some places, it appears in very small eruptions like the points of pins, with watery heads; and in others, in as large ones as peas; and sometimes in foul blotches, which, after breaking, form sores, and broad ugly scabs. These die away, and similar ones shew themselves successively in other parts, sometimes for two or three months, leaving the skin of a dirty hue.

The external application of an ointment consisting of the unguentum sulphuris with a small proportion of the unguentum hydrargyri nitrati will seldom fail to remove the complaint, if assisted at the same time with the internal exhibition of the hydrargyrus cum creta and hydrargyrus cum sulphure. Washing the parts affected with about two drachms of the aqua kali puri mixed with a pint of water will often afford much temporary relief.

In all the eruptive complaints of infants, their taking cold ought carefully to be guarded against, and the belly should be kept open. If the child is sick at the stomach, a little magnesia or testaceous powder with a small addition of the pulvis contrayervæ compositus may be given now and then. Should the eruptions strike in suddenly, every mean should be used to reproduce them again on the surface of the body.

In consequence of some bad quality in the milk of the person who nurses the child, it sometimes happens that an eruption comes out on different parts of its body. In all such cases the nurse should be changed. Constipation should likewise be obviated, and some gentle absorbent medicine be given once or twice a day.

OF ACIDITIES, GRIPES, AND FLATULENCY.

Costiveness, improper or too much food, bad milk, weak digestion, and that natural tendency there is in the stomach of all children to generate acidity, are the causes which give rise to these affections.

When the food becomes acid on the stomach, instead of being properly concocted and converted into chyle and blood, it is likely to give rise to continual crying, restlessness, drawing up of the legs forcibly to the body, hiccups, vomiting, diarrhœa, flatulency, sour eructations, griping pains, green stools, and a depression of strength; and where the irritation is very considerable, convulsions are apt to ensue.

If acidity prevails in a high degree, and the infant is troubled with sour belchings and much irritability at the stomach, it may be advisable to evacuate its contents by a weak solution of tartarised antimony, given in the quantity of one or two tea-spoonfuls every quarter of an hour, until a sufficient effect has been procured; after which, a few grains of rhubarb and magnesia may be ordered, to carry off the remaining offending matter.

To prevent any fresh accumulation of the same nature, it will be proper to give, as circumstances may seem to require, a little of the mistura

cretacea, but more particularly where any severe degree of purging attends. Together with these or other remedies, exercise, and frictions of the body, but of the abdomen in particular, should not be forgotten.

Acidities and flatulency sometimes prevail in so high a degree as to occasion severe griping pains, perfectly obvious by the infant's screaming, crying, and drawing its knees up to the belly, with the presence of abdominal tension. In such cases it will be necessary to dislodge the contents of the intestines, should costiveness prevail, by some gentle laxative; after which, we may administer absorbents * and carminatives, the last of which we may give in a clyster,† as well as by the mouth; and where the pain seem very acute, and by no means relieved, we may make a small addition of opium. As opiates do not however agree well with children, they should not be resorted to on trivial occasions. Besides adopting these steps, it will be proper to apply warmth externally to the stomach and bowels by means of heated bran or camomile-flowers put into a soft flannel bag, which probably will greatly assist in abating the pain.

Children that are partly brought up with the spoon, and who are very subject to flatulency, should always have a few caraway-seeds boiled up with their food.

As acidities, gripes, and flatulency, seem frequently to originate in some error of the diet, the proper regulation of this ought to form a principal part of their cure. Sometimes it may be necessary to change it almost wholly, or at least to withdraw something from whatever farinaceous substances are used.

A costive habit of body is very apt to occasion flatulency and griping pains in infants. This ought therefore to be obviated by giving twice or thrice a week, as the occasion may require, a small quantity of the oleum ricini, or we may substitute a few grains of magnesia in a spoonful of the aqua anethi sweetened with a little syrup of roses, or manna, to which may be added a few drops of tinctura sennæ in order to render it warmer and quicken its operation. Either of these will be preferable to rhubarb, as this possesses too restringent a power, which is not to be counteracted even by joining it with magnesia. To promote the

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* ℞. Cret. Præparat. gr. xij.
Aq. Menth. Pip. ℥ijſs.
Tinct. Lav. C. ℥ſs.
Spirit. Carui ℥ſs.
Syrup. Zingib. ʒij. M.
ft. Miſtura cujus ſumat Cochl. minim. ij. pro re nata. Adde ſi ſit neceſſitas
Tinct. Opii gutt. x.

Vel

℞. Miſtur. Cretac. ℥ij.
Tinct. Columb. ʒij.
Aq. Kali gutt. xv.—xx. M.
Capiat Cochl. minimum ter in die.

† ℞. Decoct. Hordei ℥iv.
Ol. Olivæ ʒij.
— Anis. gutt. iv. M.
ft. Enema.
Adde pro re nata
Tinct. Opii gutt. viij.—x.

peristaltic motion in costive habits, it will be advisable to rub the region of the stomach and belly several times a day with a piece of flannel or the hand somewhat warmed in addition to using medicine.

Where flatulency is an attendant upon a lax state of the bowels and indigestion, its remedy will consist in a removal of these complaints, as advised under the heads of Diarrhœa and Dyspepsia.

Dr. J. Clarke of Dublin observes,* it is the general opinion of writers on the diseases of infants, that by far the greater number of these originate from acidity or coagulation of the milk, and that therefore absorbent and saponaceous medicines ought to be used, to counteract these morbid causes. From various considerations, he is induced to suppose that this opinion is founded on a fallacious analogy and superficial observation of the matters evacuated by infants. He finds, that healthy human milk suffers no coagulation from acids, ardent spirits, runnet, infusion of the stomach of a fœtus, nor from any of the known coagulating substances; and that it contains little or nothing of that matter which constitutes curd, so that there can be no power in the stomach of an infant to separate curd from it: that though it is supposed prone to run into an acescent or acid state, it is far less so than that on which the young of ruminant animals are fed; a cow's milk acquiring greater acidity in thirty-six hours than the human milk does in many days; and that cow's milk in moderate warmth becomes offensively putrid in four or five days, a change which human milk does not undergo in many weeks and sometimes months. He finds also that green fæces, commonly ascribed to acidity, because bile is turned green by acids, cannot arise from acid milk, because it is only the mineral acids which produce that change of colour; nor has the daily use of sour milk or vegetable acids any such effect on adults, and fæces of this colour are observed in cases where no acidity has been suspected.

Dr. Underwood in speaking on the properties of human milk,† enters into a controversy with Dr. Clarke for alleging that this contained no sensible quantity of curdy matter. From the experiments made by the former of these gentlemen it appears that the human milk does really contain no inconsiderable portion of curdy or caseous matter, though its separation is attended with peculiar circumstances. He allows that neither runnets, acids, nor spirits, separate any very sensible quantity of this curd in the space of eight-and-forty hours, as they constantly do in cow's milk; but that in a longer time it is afforded in evident quantity. It appears also that human milk has less tendency than other kinds to run into acescency or putridity. The length of time necessary for the separation of the curd seems to have been the cause, in Dr. Underwood's opinion, of Dr. Clarke's denying its existence.

In a practical view this difference of sentiment on the subject does not

* See his Treatise on the Properties attributed to human Milk, inserted in the Transactions of the Royal Irish Academy.

† See his Treatise on the Diseases of Children.

seem very important. Although the coagulation of milk in the stomachs of infants labouring under disease, be granted, it does not follow, that the chief attention of the practitioner should be directed to the destruction of acidity, as the mean of preventing such coagulation. For the acidity itself is only an effect, arising from a diseased action of the stomach, which of course would engage his attention.

OF VOMITING.

When what has been taken is returned crude and unaltered, it may be suspected to arise from over-feeding, and to require nothing more than temperance for its cure. Vomiting, however, is often an attendant on other complaints, and sometimes of itself constitutes an original disease.

Where there is a vomiting of digested food, it will be right to change the mode of diet, or to open the body by some gentle aperient. If these means do not answer, and the vomiting continues, it will be proper to clear the stomach by a gentle emetic, afterwards giving the saline medicine in an effervescing state, with a drop or two of the tincture of opium. We may at the same time apply a blister over the region of the stomach, or rub it well with anodyne liniment.

OF A LOOSENESS OF THE BOWELS.

Various causes may and do occasion a diarrhœa in infants, and perhaps in the greater number of instances it is brought on, either by too much or unsuitable food, in which cases a diligent attention must be paid both to the choice and regulation of the diet.

In some instances, however, it may be symptomatic of other diseases, or may arise from an exposure to cold, or an increased secretion of bile. In the latter case, it may be advisable first of all to cleanse the stomach by a gentle emetic; but in all, it will be proper to clear the intestines by a few grains of rhubarb, the operation of which being over, we may give a little of the prepared chalk,* joined with some aromatic twice or thrice a day.

When the stools continue to be more frequent than they ought to be, and are either slimy or tinged with blood, it will be necessary to repeat the rhubarb several times at proper intervals, and in the mean time the infant may take something to control the complaint,† as well as proper nutriment to recruit its strength. Flour, sago, or rice boiled in

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* ℞. Cret. Præparat. ʒfs.
Aq. Anethi
— Cinnam. āā ℥jfs.
Tinct. Card. C. ʒij.
Syrup. Cort. Aurant. ʒj. M.
Capiat Cochl. j. Infantis bis terve in die.
Vel
℞. Pulv. Aromat. gr. ij.
Cret. Præparat. gr. vj. M.
fit. Pulvis ótis horis fumendus.

† ℞. Confect. Aromat. ℈j.
Aq. Puræ
— Cinnam. āā ℥jfs.
Tinct. Catechu ʒj.
—— Opii gutt. xij. M.
Cochl. unum Infantis mane, hora meridiana, et nocte fumendum.

milk, together with the jelly of a calf's foot or isinglass, with a small addition of wine, will be good articles of diet under such circumstances.

To sooth the irritable state of the intestines, a clyster composed of starch, or of fat broth, with a few drops of tinctura opii, may be injected twice or thrice a day.

In addition to these means, it will be advisable to envelope the infant's body in flannel, so as to keep it of a proper temperature.

OF THE LOCKED JAW, OR TRISMUS NASCENTIUM.*

This is a disease not often met with in cold climates, but which is of very frequent occurrence in warm ones, particularly in the West Indies, where many infants are carried off by it soon after birth, and especially negroes and those of colour, as they are usually called.

In most cases the disease is wholly confined to the jaw; but in a few a considerable contraction and rigidity of other muscles of the face, and a peculiar fixedness of the child's features, have been observed.

It has been attributed to costiveness, and not purging off the meconium in the bowels; to dividing the navel-string with a blunt lacerating instrument; to not paying attention to its falling off, and consequent irritation from a neglect of the remaining sore; and to exposures to cold, and currents of air, negro women being usually permitted to lie-in at their own houses, which are often in but very indifferent repair.

Dr. James Clarke, in his Treatise on the Yellow Fever and other West India Diseases, informs us, that from having observed the children born in large negro huts generally were exempt from any attack of the disease, and that white children, or those of free people, who had their kitchens apart from their dwelling-houses, escaped the jaw-fall (the term by which the disorder is known in places where it is prevalent,) he suspected that the smoke from burning wood, which is the usual fuel in the West Indies, was the cause of it. In consequence of this, he gave orders that no fires should be allowed in the negro-houses where the lying-in women were, which effectually answered the purpose of preventing the disease. He adds, that he recommended a lying-in hospital to be built on every estate near the negro-houses, with a planked floor, so that no fire could be kept in it; since which, no children, who were born in these hospitals, and remained in them with their mothers for nine days, have ever been attacked with this disease.

I perfectly agree with Dr. Clarke that it is highly necessary every plantation should be furnished with a lying-in house, and it is what I strongly enforced to West India proprietors in a work † I published some years ago; but I must dissent from him in ascribing the smoke arising from a wood fire, as the sole cause of the trismus nascentium. Certain it is that infants are never attacked with it after the ninth day of their age, if even exposed to the influence of this cause; and it is therefore probable that it

* Trismus Nascentium being a spasmodic disease, ought, in adhering to classification, to have been included among those of this nature; but as being peculiar to infants, is inserted here.

† See Medical Advice to the Inhabitants of warm Climates, p. 10 of the Introduction.

is not the real, and far less the sole one. I am much inclined to suppose that the disease often arises in negro children from the want of attention to the falling off of the navel-string, and the consequent irritation from a neglect of the remaining sore. The period at which the disease occurs seems to correspond exactly with the falling of the funis, and the ulceration left behind. What makes strongly against Dr. Clarke's supposition is, that tetanus (of which trismus nascentium is a species) is most usually cured very readily when it arises from an exposure to cold, or any other cause than the irritation occasioned by a wound. When produced by this, it generally proves fatal. The disease in question terminating always in this manner, may, with great propriety, therefore, be ascribed to a cause which is of a similar nature.

Another argument which shews the fallacy of Dr. Clarke's supposition with respect to smoke from burning wood being the chief cause of trismus, is, that during my practice in the West Indies I met with several instances of the disease in white children, in whom it was impossible to have arisen from this cause, as neither chimnies nor fire-places are to be found in the dwelling-houses of the white inhabitants, and the kitchen is always a detached building, into which such infants never enter.

The trismus nascentium proves fatal almost in every instance.

No effectual means having yet been discovered for the cure of this disease, all that can be done is to avoid as much as possible the several causes which have been mentioned as being likely to give rise to it. Every lying-in woman ought therefore to be accommodated in a comfortable house which is annoyed neither by smoke, rain, nor any partial current of air. On the birth of the infant, the navel-string should be divided with a pair of sharp scissors, after which the portion that remains should be wrapped up in a little scorched linen. No force whatever must afterwards be used to bring on its separation; it should come away spontaneously; and if any little ulceration is left behind, it ought to be attended to, and daily be dressed with some mild healing ointment, such as the unguent. spermatis-ceti or ceratum lapidis calaminaris, avoiding at the same time any great pressure upon it by bandages.

As I have supposed the disease to arise most commonly from the irritable state of the divided funis, might it not be advisable, by way of prevention, to wet the part frequently with a watery solution of opium?

To remove costiveness, and carry off the meconium, which has been assigned by some practitioners as a probable cause, one or two tea-spoonfuls of the oleum ricini may be given to the child the day after its birth, which may again be repeated in two or three days, should the mother's milk not procure a sufficient number of stools.

On an attack of the disease, we ought certainly to have recourse to the means advised under the head of Tetanus, however unsuccessful they may be likely to prove.

OF THE INFANTILE REMITTENT FEVER, OR FEBRIS INFANTUM REMITTENS.

From the age of one year to five or six, children are liable to be attacked with a fever, that makes its advances very gradually, manifesting itself by irregularity in the bowels, which are sometimes too costive, and, at others too much relaxed.

On its coming on, the child becomes fretful, his lips are dry, his hands hot, his breath short, and his pulse quick, being often 120 in a minute: he is unwilling to stir or speak, the sleep is disturbed, and the food rejected: sometimes very little is discharged from the intestines; and at others too much, the stools being often mucous or slimy: some children are delirious, or lost and stupid; many for a time are speechless. In the course of the day there are several slight accessions of fever, during which the child is usually drowsy; in the intervals of these paroxysms he appears tolerably well, though at times more peevish than usual.

These symptoms probably manifest themselves, more or less, for eight or ten days, when, all at once, a more violent paroxysm of fever will arise, preceded by a shivering fit, and by vomiting. The pulse rises to 140 in a minute, the cheeks are flushed, the drowsiness is much increased, and the child keeps picking almost incessantly at the skin of the lips and nose, and of the angles of the eyes.

This species of fever is mild at its commencement, slow in its progress, and very uncertain in its event. In some respects it resembles hydrocephalus acutus; but in the latter, there are occasional screamings, with much tossing of the hands above the head, intolerance of light, with more or less of squinting; whereas, in the remittent fever of infants, none of these appearances are to be met with. In this fever, the desire for food is destroyed, and the little patient will take neither aliment nor medicine. In hydrocephalus, on the contrary, he will usually take whatever is offered to him without reluctance. The fæces are remarkably changed from their natural appearance in the remittent fever, being sometimes black, and smelling like putrid mud; and at others, they are curdled, with shreds of coagulable lymph, floating in a dark greenish coloured fluid. In hydrocephalus we meet with nothing similar in the motions.

The infantile remittent fever appearing to depend partly upon an irritation in the intestines, and perhaps partly upon an absorption of their putrid contents, the proper intentions of cure are to clear the bowels by purgatives, and then to restore the action of the stomach and intestines by tonics.

The first thing therefore to be done, is to administer some active purgative: I mention active, because the intestines are usually so torpid, that what would on another occasion be considered a full dose, will have no effect in this complaint. Calomel, combined with jalap or cathartic extract, may perhaps be preferable to other purgatives.

The bowels having been effectually cleared, they are afterwards to be kept open by a small quantity of some neutral salt, combined with

manna, every other morning, as long as the fæces have an unnatural appearance.

To restore the proper action of the stomach and intestines, and obviate debility, we may afterwards recommend a daily use of some tonic medicine.*

OF THE THRUSH, OR APHTHÆ.

The thrush in children has generally been supposed to arise from acidities, or some other acrimonious humour lodged in the stomach and bowels. Various causes of derangement in the alimentary canal are certainly to be regarded as those which occasion aphthæ. One of the chief of these is worms, and it appears in this way that these two complaints are so frequently conjoined. Another occasional cause is bad milk, which may be vitiated by whatever is injurious to the nurse's health, such as great anxiety, violent passions, poor diet, &c.

In some instances the thrush may possibly depend upon the natural habit of the infant as well as upon the mode of bringing it up, particularly in regard to food, air, and the state of its bowels. This seems a warrantable conclusion, inasmuch as the thrush is sometimes found to seize every infant in certain families, in whatever way the children may be managed, as well as to occur occasionally in others upon a want of proper attention to the state of the alimentary canal, where a great number of other children properly watched have uniformly escaped it.

The disorder generally appears first in the angles of the lips, and then on the tongue and cheeks, in the form of little white specks. These increasing in number and size, run together more or less according to the degree of malignity, composing a thin white crust, which at length lines the whole inside of the mouth from the lips even to the œsophagus, and is sometimes found to extend into the stomach and through the whole length of the intestines; producing also a redness about the anus. When the crust falls off, it is frequently succeeded by another of a darker colour, or livid hue; but this happens only in the worst kind of thrush, for there is a milder sort that is spread thinly over the lips and tongue, which returns a great many times, and always lasts for several weeks.

When the thrush is an original disease, it is never attended with any fever at its commencement, although the mouth is frequently so much heated as to excoriate the nipples of the nurse, and becomes so tender that the child is often observed to suck with reluctance and caution; but when it has arisen in consequence of severe bowel complaints or other infantile disorders, it is then sometimes accompanied with fever. Even in very bad kinds of thrush there does not appear, how-

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* ℞. Decoct. Cinchon. ℥iij.
Tinct. Columb. ʒij.
Acid. Sulph. Dilut. gutt. xij. M.
Capiat. Cochl. unum Infantis bis terve in die.

Vel

℞. Pulv. Cascarillæ ʒj.
—— Rhabarb. gr. xij.
Rubig. Ferri ℈ss. M.
et in Chartulas xij. divide, quarum fumat unam mane et vespere.

ever, any evident fever at the commencement of the complaint; but towards the close it may be apparent and is sure to be of the low kind.

The disease, when recent, and confined to the mouth, may in general be easily removed; but when of long standing, and extending down to the stomach and intestines, it very frequently proves fatal. Among the French, and especially in their public hospitals, the thrush seems to be a much severer disease than in England.

To evacuate the stomach of acidities or other acrimonious humours, it will be proper on the first appearance of aphthæ to give a gentle emetic. This may be done even in slight cases; but where the specks are of a dark colour, and the inside of the cheeks are beset with them, the remedy, by emptying the stomach of the crude juices and acrid matter, will be likely to prove highly useful.

After the operation of the emetic we may recommend a course of the testaceous powders, giving a preference to the purest and softest. If the child is of a costive habit, a little magnesia may be advised; on the contrary, if its bowels are rather loose, and its frame delicate, we may then substitute two or three grains of the compound powder of contrayerva. The testaceous powders are to be administered for three or four days successively, and then we may prescribe something more laxative, to carry down the scales as they fall off from the ulcerated parts. In mild cases rhubarb is regarded as the best medicine; but where the child is of a robust habit, and the disease is violent and has extended rapidly, it may be necessary to make an addition of a few grains of calomel.

When a child of a weak habit is attacked with thrush which appears of a malignant nature, and which from its dark appearance threatens to terminate in gangrene, we should give a decoction of the bark joined with a little aromatic confection. To render its efficacy the more certain, it may likewise be used in the form of clyster with the addition of a few drops of tinctura opii to prevent its passing off by stool.

In order to keep the infant's mouth clean and comfortable, and to prevent as much as possible any injury to the nurse, as well as to dispose the sloughs to fall off, and incline the parts underneath to heal, it is customary to make use of detergent applications in the form of gargles and lotions. In the gangrenous thrush it will be best to wash the parts frequently by means of a syringe, or a piece of soft linen rag rolled round the finger, with a strong decoction of Peruvian bark rendered somewhat sharp with the diluted sulphuric acid; but in common cases of thrush unattended by any disposition to gangrene, we may employ either of the gargles recommended below.*

When an excess of purging attends, the medicines advised under the head of Diarrhœa will be necessary.

The other means and remedies directed for the cure of aphtha chronica, in the former part of this publication (see page 389,) will likewise

* R. Decoct. Hordei ℥iv.
Boracis Pulv. ℈ss.
Aluminis Uſt. gr. v.
Mellis Roſæ ℥ſs. M.
ft. Gargarifmus.

Vel

℞. Aquæ Roſæ ℥iij.
Pulv. Boracis ℈j.
Mellis Optim. ℥j. M.

Vel

be proper in this species of thrush, to which head I must beg leave to refer the reader.

OF A FALLING OF THE FUNDAMENT, OR PROLAPSUS ANI.

We often meet with this disease in children of a weak habit, or who have been much afflicted with severe purgings.

In prolapsus ani considerable advantages have been experienced from a frequent use of astringent injections,* particularly of an infusion of galls or oak-bark; and when a small proportion of opium is added to the liquor, it tends greatly to lessen the irritation in the extremity of the rectum. The same may be used as a wash to the protruded parts, after which they may be sprinkled with a little Armenian bole powdered very fine, and then be reduced. Should great soreness be experienced by the reduction, the fingers employed on the occasion may be smeared with some of the ointment here directed.†

With the view of strengthening the parts, the debility of which is in general to be considered as the sole cause of this disease, we should advise not only the cold bath in a general way, but likewise the throwing cold water more directly on the buttocks and back of the child; and besides these tonics, it should be put under a course of steel, myrrh, and the bark. See these under the head of Dyspepsia.

OF THE WEANING BRASH, OR ATROPHIA ABLACTATORUM.

This disease occurs in children that are weaned too early, or such as are attempted to be reared without the breast, and also where improper food is given with or without sucking. It appears most frequently in children of a lax fibre, and whose constitutions at a more advanced stage of life might be supposed liable to the attack of strumous disorders.

It commences with frequent griping and purging, in which the stools are usually of a green colour, and is often accompanied with bilious vomiting. In the progress of the disease the stools are sometimes ash-coloured and shining, and sometimes lienteric. Atrophy succeeds to these symptoms, and convulsions often come on and carry off the child.

A modern writer‡ supposes the exciting cause of this disease to be too sudden an alteration of the diet of a child at an unfit season.

The weaning brash, if attended to in time, may in general be removed; but if neglected, it frequently proves fatal before the sixth or seventh week.

On dissection, the mesenteric glands usually appear either inflamed or enlarged. In some instances tubercles have been found in the lungs. In

‡ See Essays on the Diseases of Children, by J. Cheyne, M. D. vol. i. p. 34.

*Vel	†
℞. Conferv. Rosæ ℥fs.	℞. Pulv. Gallar. ℥ij.
Aluminis ʒfs.	
Aq. Puræ ℥iij.	Adipis Suillæ ℥j.
Acid. Sulph. Dilut. gutt. xv. M.	
* ℞. Cort. Querc. Contus. ℥ij.	Opii Purificat. ʒfs. M.
Aq. Fontan. ℥viij.	
Coque ad. ℥iv. Colatur. adde	
Tinct. Opii gutt. xv. M.	ft. Unguentum.

others the liver is firm and larger than natural, and the gall-bladder is filled with dark green bile. Remarkable contractions of the diameter of the gut in several parts of the intestinal canal have been perceived in some instances.

A proper attention to diet constitutes the first point to be attended to for the removal of the disease; and above all, a return to the natural food, the mother's milk, where circumstances will admit of it. Where they do not, animal food in the form of broth or jelly should principally be employed. Vegetable food must be prohibited, as well as fruits, acids, and compositions of which butter and sugar form a part. Pure air, exercise, gentle frictions, and frequent washings of the body with tepid or cold water, will be good prophylactics. Flannel worn next to the skin, worsted stockings, and every precaution against cold irregularly applied, should be attended to.

For the cure of the disease occasional gentle laxatives, such as rhubarb, with absorbents and aromatic medicines interposed, together with minute doses of ipecacuanha joined with calomel, as prescribed below,* seem most advisable.

Where the disease arises in children of three or four years of age, we must have recourse to the means recommended under the head of Atrophia.

OF THE PURULENT OPHTHALMIA, OR OPHTHALMIA PURULENTA.

This disease is noticed under the head of an Inflammation of the Eyes, page 94.

OF TEETHING.

Of all the occurrences to which children are liable, not one is attended with such grievous and distressing symptoms as difficult dentition. With regard to the time of their cutting teeth, no fixed or exact period can be laid down, as some cut their first tooth at three or four months old, while others again have not the smallest appearance of a tooth before the eighth or ninth month. Dentition generally commences, however, in the majority of children between the fifth and eighth month, and the process of the first teething commonly continues to the sixteenth at the least, but often much longer. The two fore-teeth, or dentes incisores of the under jaw, are those which usually appear first, and shortly after these are observed, two more come out in the upper one exactly opposite to the two former. These are succeeded by the four molares, then the canini, and the last of all of an infant's first teeth, their antagonists, or the eye-teeth, making in all sixteen. This, it is well known, is the ordinary number of a child's first teeth, as they are called; but some infants cut four double teeth in each jaw instead of only two, making the whole number twenty.

In children who are healthy and strong the process of dentition goes on as has just been described, and the teeth are cut soon and easily; but in unhealthy and weak infants the process is both slow and uncertain. Accordingly, children sometimes cut their teeth irregularly, both by the teeth appearing first in the upper jaw, and also at some distance, instead of being contiguous to each other, which has been accounted, and with some

* ℞. Pulv. Ipecac. gr. j. ad ij.
Zingib. gr. vj.
Calomelan. gr. ſs.—j. M. et in Chartulas iv. divid. quarum sumat Infans j. singulis aut alternis noctibus.

reason, an indication of difficult or painful dentition. It may also be remarked, that the ease or difficulty of dentition may be guessed at by the circumstances under which the two first teeth shall happen to be cut, the succeeding ones generally making their way in a correspondent manner.

At six or seven years of age all children shed their teeth in a gradual manner and get a fresh set, and about the age of one-and-twenty, four more come out, one in the corner of each jaw, which from their appearing at that period of life have been named dentes sapientiæ.

Dentition is usually preceded by, or accompanied with various symptoms: the child drivels; the gums swell, spread, and become hot; there is often a circumscribed redness in the cheeks, with eruptions on the skin, especially on the face and scalp; a looseness ensues, with gripings, stools of a green, pale, or leaden blue colour, sometimes mucous, and often thick; and the child is watchful and peevish, starts during sleep, and seems convulsed in particular parts of its body. In almost all cases the child shrieks often, and thrusts its fingers into its mouth. These symptoms are sometimes followed by a cough, difficulty of breathing, scrofula, marasmus, and hydrocephalus, and very frequently by much febrile heat, thirst, and convulsions.

When the child's body continues open, and none of the violent symptoms attendant on much irritation ensue, we need seldom apprehend any bad consequences from teething.

It has been observed that infants cut their teeth more readily in winter than in summer; that such as are inclined to be lean cut them more easily than those that are fat; and children whose bowels are regularly open the most safely of all.

The system during dentition being disposed to inflammation, strong lusty children are much oftener attacked with fever than the tender and delicate; like athletic adults, who are more disposed to inflammatory complaints than those who are of a colder but less healthy temperament; and it is by acute fever or convulsions that infants are carried off, who are well known to survive various lingering and distressing complaints if their viscera are sound. The extremes of high health and of debility are both attended with some degree of danger; the one being exposed to acute fever or convulsions, the other to slow hectic or marasmus.

In those cases where the gum appears considerably swelled, and the child seems to suffer much from the stimulus of the tooth in working its way, it may be advisable to cut down upon it with a lancet or scarificator. Where no such appearances present themselves, and the child seems nevertheless to be very restless and uneasy, we can do little more than attend to the different symptoms.

If acidity prevails, it is to be obviated by the mistura cretacea or small doses of magnesia; if flatulency and griping pains attend, carminatives, such as caraway-seeds, or a drop or two of the oleum anisi, are to be mixed with the food; if the body is costive, it must be opened with some mild laxative, as the oleum ricini; and if violent startings, with loud shrieks, and a disposition to convulsions take place, opiates must be resorted to. As such, about a tea-spoonful of the syrupus papaveris albi will be the most proper. The application of a blister between the shoulders may also be advisable.

In recommending opiates to be administered to children when there is reason to apprehend they will be attacked with fits in consequence of the great irritation occasioned by the teeth working through the gums, I beg leave to observe at the same time, that nurses are too apt to employ some preparation or other of opium in the watchings of children, in order that their own rest may not be disturbed in the course of the night. This practice seldom fails to prove injurious to infants.

When a considerable degree of fever attends on dentition, it has been customary to bleed from the neighbourhood of the parts immediately labouring under pain and irritation, and with this view blood has been drawn from the jugular veins, and leeches have been applied behind the ears. It is probable that the application of small blisters to the same parts might likewise be attended with a good effect. Gentle diaphoretics, particularly the vinum antimonii or antimonium tartarisatum, in very small doses, together with diluting liquors, if the child does not suck, will also be proper. Where there is a retention of urine, nitre and warm bathing should be resorted to.

A slight purging arising during dentition should not be hastily stopped, as this, and eruptions on the skin, when spontaneous, are the grand means of easy and safe dentition.

The practice hitherto adopted of giving children coral and other hard substances to put into their mouth during the period of teething, is highly improper, as they have a tendency to harden the gums. A piece of small wax candle that will yield in some measure to whatever pressure is made upon it by the gums of the child, may be serviceable.

During dentition children are sometimes troubled with ulcerated gums; but these may be easily cured by keeping the body open, and touching the parts affected with some astringent application. As much alum as will give a moderate roughness to a little honey, or a little borax and honey, may be used.

Pure air, proper exercise, wholesome food, an open belly, and every thing that has a tendency to promote general health, and to guard against fever, will greatly contribute to the safety of dentition, as well as to the child's passing quickly through this hazardous period.

OF CONVULSIONS.

Violent spasmodic affections sometimes attack infants without any apparent cause; but in general they are produced either by a lodgment of some acrid matter in the intestines, or wind pent up, or they arise from teething, worms, the sudden striking in of a rash, or the infection of the small-pox. Any trifling matter capable of irritating the nervous system will induce symptomatic convulsions in some infants; while others again will withstand a great deal. The younger and more irritable the infant is, the more liable will it be to symptomatic convulsion, especially from any considerable disturbance in the first passages.

We are informed by Dr. Clarke, of Dublin, that owing to mismanagement and bad air, an epidemic convulsive disease prevailed in the lying-in hospital of that city among the infants within the first nine days, which

swept off great numbers of them annually, but that this was at length obviated by discovering the cause.

When convulsions proceed from any other cause than an eruption of the small pox (in which they are usually regarded as prognosticating a favourable species of it,) they are always dangerous as well as alarming. A surer indication of danger is to be drawn from the distance of the paroxysms than from the forcible contractions of the muscles during the fit. Where the intervals are short, although the fit itself be not long nor violent, the disease is to be considered as more dangerous than where severe paroxysms are attended with long intervals.

In the treatment of convulsions in children, the chief object to be attended to is the removal, if possible, of the cause which has given rise to them. If they seem to be occasioned by improper food and indigestion, a gentle emetic may be given, and for this purpose we may employ a weak solution of tartarised antimony, of which a tea-spoonful may be administered every ten or fifteen minutes until the desired effect is procured. When supposed to proceed from a lodgment of acrid matter in the bowels, this ought to be removed by a laxative clyster, or some gentle aperient given by the mouth; if from flatulency, then carminatives ought to be used, as advised under that particular head; and if from teething, whenever the tooth can be discovered working a passage through the gum, a slight scarification may be made with the edge of a lancet immediately over it; and this operation we may repeat for several successive days, till either the tooth makes its way, or the convulsions cease. If slight scarifications are not found to answer the purpose, we may cut boldly down to the tooth, and liberate it in every part; and this plan we may likewise adopt with all such as are manifestly making their way.

Worms having been looked upon as a frequent cause of recurring convulsions, we should always have recourse to the remedies which have been advised under that particular head, when from the prevailing symptoms we suspect them to have been excited by this cause.

Should convulsions have arisen from the sudden disappearance of a rash, or the drying up of a discharge from behind the ears, small blisters ought to be applied, and warm bathing be used. Internally we may administer a few drops of the spiritus ammoniæ compositus, joined with sal succini.

When the disposition to convulsions continues after the bowels and stomach have been properly cleansed, we may have recourse to antispasmodics to allay irritation; such as castor, musk, the volatile tincture of valerian, rectified oil of amber, camphor, a small quantity of the syrup of white poppies, or a few drops of the tincture of opium. Rubbing the spine, palms of the hands, and soles of the feet with the oleum succini or aquæ ammoniæ, may likewise have a good effect. Where the fits are of long duration, warm bathing and the application of blisters will be necessary.

In those convulsive attacks which frequently precede an eruption of the small-pox, nothing will be required but the free exposure of the child to cool air.

The aqua kali præparati given in doses of from five to fifteen drops, according to the age of the child, and repeated every ten minutes, has been known effectually to remove convulsive affections in young children,

which had for a length of time resisted the powers of zincum calcinatum, musk, extractum hyoscyami, clysters of asafœtida, anodyne inunctions, with opium and blisters. It is probable, however, that in these cases the fits arose from severe griping pains in consequence of acidity.

Where a high degree of organic debility prevails, volatile alkali, viz. the spirit. c. c. succinat. in doses of a few drops, in some proper vehicle, may be substituted for the former. In clysters, the liquor vol. cornu cervi is likewise of avail in these cases in a greater or less dose, according to circumstances.

When convulsions are not preceded by any of the usual symptoms, they may be regarded as idiopathic. In difficult labours, for example, the brain is often much compressed, and soon after delivery the child is attacked with fits. In such cases it will be advisable to let the navel-string bleed one or two tea-spoonfuls before it be tied. Thus the oppression of the brain will be relieved, and the disagreeable consequences will be prevented. But if this has been neglected, and fits have actually come on, we must then endeavour to make a revulsion, and empty the vessels of the head by opening the jugular vein, or by applying leeches to the temples; by procuring an immediate discharge of the meconium; by putting blisters behind the ears, or to the back; by bathing the feet in warm water; and by rubbing the soles with aqua ammoniæ.

Inward fits are much talked of by nurses, and some authors have indeed made mention of them; but more particularly Dr. Armstrong. Infants during the first month are said to be more or less liable to them. The symptoms are these: the child appears as if it was asleep, but the eyelids are not quite closed; and if you observe them narrowly, you will see the eyes frequently twinkle, with the white of them turned up. There is a kind of tremulous motion in the muscles of the face and lips, which produces something like a simper or smile, and sometimes the appearance of a laugh. As the complaint increases, the infant's breath seems now and then to stop for a time; the nose becomes pinched; there is a pale circle about the eyes and mouth, which sometimes changes to livid, and comes and goes by turns; the child starts, especially if you stir it ever so gently, or if you make the least noise near it. Thus disturbed, it sighs or breaks wind, which gives relief for a while; but presently it relapses into the dozing. Sometimes its struggles hard before it can break wind, and seems as if falling into convulsions; but a violent burst of wind from the stomach, or vomiting, or a loud fit of crying, sets all to rights again.

For the removal of these, Dr. Armstrong recommends us to give antimonial wine in a few drops, according to the age of the infant; but all that appears to be necessary is, to take up the child when it sleeps too long, and the smile often returns, with any of the other symptoms just described, and to tap it gently on the back, rubbing its stomach and belly well before the fire. This gentle exercise will bring a little wind from its stomach (which is supposed to be the cause of the complaint,) and the child will then go quietly to sleep again. Should these simple means not prove sufficent, some carminative may be given to it, such as a drop or two of the oleum anisi, or oleum carui on a bit of white sugar.

OF THE VENEREAL DISEASE IN INFANTS, OR SYPHILIS INFANTUM.

Although a child sometimes shews some appearance of syphilis at the time of its birth, still it more frequently happens that none are to be observed until after an expiration of at least ten or twelve days.

When the disease exists at the time of its birth, or shews itself soon afterwards, it makes its appearance in the form of an erysipelatous efflorescence, dispersed over the whole body, the cuticle is in part or altogether destroyed, and a serous matter oozes from the skin. When it makes its appearance some days after the birth, irregular blotches of a light red colour and somewhat elevated, arise about the anus, nates, and pudenda. Crusty eruptions appear in other parts of the body, and these in some places continue dry and scale off, but in the others an acrid thin matter exudes from them.

Although we may not be able to trace any marks of the existence of the disease, in either the father or mother of the child, still it may possibly be derived from them.

When children are born with the appearances just described, or several dead births have followed, we may for the most part attribute them to the parents labouring under some constitutional affection of syphilis, without their being probably aware of it. In all such cases it will be necessary to put both of them under a mercurial course.

To effect a cure in a child at the breast, it will in general be sufficient to give the necessary medicines to the woman who nurses it; which office should always be undertaken by the mother, as, by getting any other to suckle it, she should in all probability soon be infected likewise. In the progress of the cure, the same rules and cautions are to be observed as have already been pointed out in the syphilis of adults. In instances of this nature, an alterative course long persisted in ought to be preferred to that of exciting any degree of salivation.

If it is found necessary to wean the child before the cure is completed, or to introduce mercury into the habit of the child from the very beginning, instead of giving it to the woman who suckles it, we may then direct that it shall take about a quarter of a grain of calomel, or the hydrargyrus calcinatus, every night and morning, mixed up in a little honey or thick syrup: which course ought to be continued for at least a week or ten days after the disappearance of all the symptoms.

APPENDIX,

BY

EDWARD MILLER, M. D.

THE preceding work is executed with a degree of ability and judgment which reflects much honour on the talents of the author. In Great Britain, it stands so high in public estimation as to have passed through several editions within a short period. If the writer of this appendix is not greatly misinformed, it is considered by competent judges as the most comprehensive and judicious compend of medical practice now extant. The propriety, therefore, of presenting an American edition of a work of such character, calculated to diffuse so great a mass of knowledge in so condensed a form, can scarcely be questioned; and indeed it is to be regretted that the task was not earlier undertaken.

But while the merit of the author and the work is entitled to universal acknowledgment, it will not appear surprising that, in the execution of a plan so extensive and arduous, he should have delivered opinions which do not entirely accord with those of many of his professional brethren. The liberality he displays in collecting information from every authentic and respectable source, will, it is confidently hoped, induce him to consider the suggestion of some different opinions, as prompted by the same love of truth and desire of usefulness which seem to have actuated him in the prosecution of his inquiries.

It is not the design of this appendix to enter into any general examination of the doctrines contained in this volume, or to state the different conclusions which may have been formed by the writer on a number of subjects which come under discussion in the course of a performance of such great extent. For such an undertaking, he does not at present possess sufficient leisure; and even if he did, the publishers could not spare the requisite space.

Waving, therefore, a great variety of discussions which might properly find room in a wider range of remarks, the writer will chiefly confine himself to observations concerning the *Yellow Fever*, which, unfortunately for America, has long been forced upon the consideration and experience of its physicians by a train of calamities which every friend to humanity must sincerely deplore.

No apology will be demanded by Dr. Thomas from the writer for taking

up this subject, after having done him the honour of referring to a small publication concerning it, which his official duty compelled him to undertake about five years ago. In this reference to American authorities, Dr. Thomas has also stated a number of the opinions of Professor Rush, who has treated the subject at much greater length, and who may justly be considered as the leader in the investigation and establishment of the doctrines respecting that disease, which are now maintained by a great majority of the physicians in the United States.

The attempt to vindicate these doctrines will not be understood as intended to provoke a controversy with Dr. Thomas, or any other gentlemen who adopt similar opinions; as it will only proceed so far as to exhibit a few of the facts and reasonings which are deemed essential to a fair view of the subject. While the opinions of one side of the question are heard with candour and respect, it cannot be justly offensive to any person to find the opposite opinions exhibited with the same temper.

The introduction of heat and asperity into a discussion of this kind, is not only unfavourable to rational inquiry and decision, but it is likewise entirely abhorrent to the calm spirit of philosophy, which ought to preside whenever the principles of science, and especially of medical science, are undertaken to be examined. Whatever regards the health and safety of mankind is too grave a subject to become the sport of passion or the vehicle of invective and personality. As it is the wish, therefore, of the writer to deprecate any thing of this sort in the pursuit of the inquiry, so it will be his constant aim and endeavour to exclude all matter which does not strictly accord with cool and dispassionate reasoning.

The phenomena of the disease, as they are presented to the practitioner, need no particular examination, as they are much varied in different places and seasons, and as, on this branch of the subject, physicians are generally agreed.

The nature, the causes, the origin and propagation of this disease will be the principal topics of the present discussion. These have been fruitful sources of debate, not only as involving medical doctrines of importance, but likewise as deeply interesting to every community which is now, or may hereafter be, exposed to this calamity.

For the purpose of presenting the facts and reasonings on this subject in a perspicuous point of view, they will be distributed under different heads, in such manner as to preserve the connection and dependence of the several topics, and, as much as possible, to prevent repetition. As the limits assigned to this appendix will not allow a full investigation of the subject, brevity will be consulted on every point, as far as will consist with the avoiding of obscurity, or the admission of important details.

It may not be improper to apprise the reader that a considerable portion of what is here submitted to his judgment, has been taken from a *Report on the malignant epidemic which occurred in the city of New-York in the year* 1805, by the writer of this appendix. This Report was originally drawn up as an official document, addressed to the Governor of the State, and was soon afterwards published.

What are the causes and nature of the Yellow Fever ?

This malignant disease has never been known to prevail, except in tropical climates, or in those seasons of the more temperate climates, in which the atmospheric heat has, for some length of time, been equal to the tropical heat, that is, at or above 80° of Fahrenheit's thermometer. There is no instance in the United States or in Europe of an epidemic Yellow Fever, except at these degrees of heat, nor of its long continuance after the atmosphere had been reduced to a much lower degree of temperature. This is less surprizing in the northern parts of the United States, where the winters are often severe ; but it holds equally true in Spain and Italy, as well as in the southern parts of the United States, where the winters are mild, and where this disease spontaneously disappears in degrees of heat but little below the usual summer heats in the north of Europe. Examples in full proof of this have been found at Leghorn in Italy, at Cadiz, Malaga and Gibraltar in Spain, and at Charleston and Savannah in the United States. It, therefore, clearly results that the Yellow Fever is an endemic of hot climates, or an occasional epidemic of hot seasons in the more temperate climates.

From these facts, in connection with others to be stated hereafter, it is inferred that a *miasma or pernicious exhalation floating in the atmosphere*, is the primary and essential cause of the Yellow Fever. In order to produce this miasma, it is necessary that there should be a concurrence of heat, moisture, and a quantity of decaying animal and vegetable matter. It is therefore exhaled by heat from low and moist grounds, overspread with the corrupting offals of animal and vegetable substances, from such substances collected in large masses, or from any place where the process of putrefaction is going on to considerable extent. This exhalation likewise abounds more in some situations than in others. It is more frequently and copiously produced, and more highly concentrated, in warm and tropical countries than in high latitudes and frozen regions. It prevails and exerts its pernicious influence peculiarly in certain climates, seasons, and local situations. It is generated more in summer and operates more powerfully in autumn than in the other seasons of the year ; and it is uniformly more frequent and virulent in sea-port towns, in situations along sea-coasts, in plains, and near rivers, lakes, marshes and swamps, or wherever stagnant waters are found, than in the interior, high and mountainous districts of the country. It is undoubtedly one of the most universal causes of disease in nature. However diversified in quantity or virulence by local circumstances, or by varieties of climate, season or the condition of society, its effects in one degree or another are nearly co-extensive with the habitable parts of the globe.

While the noxious exhalation just described, when existing in a high degree of virulence, is considered as forming the *primary and essential cause* of this disease ; it is proper, in order to be well understood, to notice the operation of certain *secondary* or *exciting causes*. These are exposure to heat, fatigue, cold, intemperance, fear, anxiety, &c. some of which are, in general, immediately instrumental in bringing on the dis-

case in persons predisposed to it by the agency of the atmospheric poison. The noxiousness of this poison, by avoiding exciting causes, may often be long borne without producing its full effect; and hence the operation of exciting causes in suddenly producing the disease is often so striking as to lead many entirely to overlook the effect of the principal agent.

As the materials of putrefaction and the degrees of heat, in a large city, greatly exceed what is found in the adjacent country; so the diseases arising under such circumstances must be proportionably more malignant. The pestilential fevers of our cities differ only in grade from the bilious and remittent fevers of the country. They prevail in the same climates; they come on at the same season of the year; they are chiefly disposed to attack persons of the same constitution; they commit their ravages on the same organs of the body, and produce symptoms differing only in degree; and they decline and disappear at the same season and under the same circumstances. In the city we often see in the same family and under equal circumstances of exposure, the malignant forms of *Yellow Fever* and the mild forms of *remittent fever;* and in the country, while the great mass of cases are usually mild, we occasionally meet with some which exhibit the violent attack, the intense malignity and the rapid dissolution, which more frequently mark the pestilential fevers of the city.

Besides the points of analogy just mentioned, there is another equally or perhaps more remarkable. The remittent fever of the country, and the malignant fevers of our cities, have a similar irregularity which generally characterizes them, and leads strongly to the inference of the similarity of their origin. In the districts of the country where remittent fevers prevail, and in the cities which produce malignant fevers, we find these diseases, in seasons apparently similar, and even in the same seasons, often exhibiting a singular local unsteadiness in their appearance, extent and violence. In the operation of the causes which produce them, there is something remarkably contingent and desultory. Remittent fevers will prevail sometimes in one district of a low country and sometimes in another; while the whole extent of these different districts seems to be equally liable to the disease, and no adequate cause can be assigned for the visitation of the one, and the escape of the other. In like manner, some of our cities are invaded by pestilence, in unfavourable seasons; while others, apparently just as liable to be invaded, escape.

This opinion concerning the nature and causes of the Yellow Fever, derives much support from the authority of Dr. PINCKARD, who expresses his view of the subject in the following manner, (see "*Notes on the West Indies,*" page 212.)

"After all that I have been able to observe with respect to this dread complaint, I think that, regarding it as a malady of the West India colonies, it may, correctly, be said to be the effect of climate operating upon exotic bodies. It is the fever of the country—an endemial malady, which attacks those most severely whose general vigour, and whose firmness, or density of fibre, offer the strongest resistance. To look for it in ships

and vessels, or to strain the eye across the ocean, in order to fix its birth-place upon the opposite coast of the Atlantic, or to trace its descent from the shores of the Indian seas, were to overlook the reality in search of a phantom.—It needs no foreign parent; the prolific earth is its mother—its father the bright god who governs the day.

"When Europeans first take up their residence in the West Indies, it is usual for them, sooner or later after their arrival, to undergo an attack of fever, which in times of peace and tranquillity, when, as they are called, the "*new comers*" are but few, is termed a "*seasoning-fever*"—but, in times of war, when, from great multitudes arriving at the same period, its destructive effects are more striking, is baptized with the terrific name of—"*yellow fever*:"—but, whether denominated *seasoning*, *yellow*, *Bulam* or *Siam*, or marked by any other appellation, it is only the common bilious fever of hot climates: and it appears under an intermittent, a remittent, or a continued form, according to the soil and situation of the place; or the habit of the body, and other circumstances of the person attacked. In negroes and creoles it is frequently an ague—in those who are in a degree acclimates, a remittent—and in *new-comers*, a *continued*, or, as it is commonly termed, a *yellow* fever—preserving, in each case, a distinct type throughout its course; while, in other instances of its attack upon Europeans, it shifts its form, and runs its progress with the most uncertain irregularity: in proof of which I may remark that it has happened to myself to receive newly-arrived soldiers into the hospital, at one and the same time, with this seasoning malady, under all the varieties of its intermittent, remittent, and continued form; and, although each has been differently attacked, all of them have died, in the course of only a few days, with every symptom of the most malignant *yellow* fever.

Is the Yellow Fever a modern disease?

It has been maintained by a few writers that this is a new disease, the product of modern times, and entirely unnoticed and unknown to the ancient physicians. But a slight examination of the writings of *Hippocrates*, who flourished more than four hundred years before the Christian æra, will be sufficient to prove that he was familiarly acquainted with it, and had often observed it under its most malignant and fatal forms.

Two or three quotations from the works of this illustrious ancient will be sufficient to remove all doubt on this subject. The two symptoms which are supposed to be most characteristic of this disease, are *yellowness of skin*, and *black vomiting*. A number of passages might be adduced to shew that Hippocrates frequently met with these symptoms in the malignant fevers which fell under his care. Such only will be mentioned as are clear, pointed and incapable of being mistaken. In the ninth section of his book of Crises, he asserts that "*in burning fevers* (*causus*) *a yellowness of skin appearing on the fifth day, and accompanied by hiccuft, is a fatal symptom.*" This is a brief, precise, and appropriate description of the disease, at one of its most important stages. The ap-

pearance of these symptoms at that period gives reason to apprehend the fatal event, which often takes place soon afterwards, and more frequently on the next, or sixth day, than on any other of the disease. Such a description, it is presumed, can apply to no other febrile disease but that now in question.

The terrific symptom of *black vomit*, which, among the Spaniards, gives the denomination of the disease, is also frequently mentioned by Hippocrates, and represented by him as being of fatal import. In his account of malignant fevers, he often uses the phrases of *black bile*, and *black vomit*, in such a manner as to prove that they had been particularly noticed by him and had made a due impression on his mind. In the twelfth section of his *Prognostics*, he asserts that if the matter vomited be of a *livid* or *black* colour, it betokens ill. In the first section of the first book of his *Coan Prognostics*, he enumerates *black vomiting* in a catalogue of the most fatal symptoms. And likewise in the fourth section of the same book, he considers *porraceous*, *livid*, or *black vomiting*, as indications of great malignancy.

The importance of these notices is still further illustrated and confirmed by recollecting that Hippocrates practised physic, during a considerable portion of his life, on the shores of the Mediterranean, and in parts of Greece, nearly in the same parallels of latitude with those in other districts of Europe, and in America, where the greatest ravages of this disease have been since exhibited.

If it were necessary to multiply proofs of the antiquity of this disease, it would be easy to obtain them from the works of Aretœus and Galen, who observed and recorded the same symptoms, in connection with the malignant fevers of their times, which had been previously described by Hippocrates.

Is the Yellow Fever a contagious disease?

In the whole circle of medical doctrines, there are few more interesting or more obscure than those which respect the nature of the noxious principle which produces malignant fevers. Whether it be considered as a *miasma* or a *contagion*, it is altogether invisible and intangible, and can in no manner be subjected to the examination of the senses, however armed or improved by artificial means. If the doctrine of contagion were merely a matter of curious speculation, it might safely be left to the conjectures or even the fancies of the subtle theorist. The gratification of our desires to penetrate into the mysteries of nature, if the inquiry terminated there, might be surrendered without regret. But it is an investigation of the most extensive, important and practical kind. It not only affects our principles concerning a numerous class of destructive diseases; but, in an especial manner, it influences the arrangements of commerce, the intercourse of nations, the connection of communities and families, and many of the most important regulations of police. In the question, what diseases are, and what are not contagious, is often involved the momentous question concerning the means of preventing

and arresting them; and a mistaken opinion of these points frequently leads not only to much public inconvenience and injury, but in some instances to the most deplorable augmentation of mortality. If a miasma locally diffused in the atmosphere be mistaken for a contagion emitted from the bodies of the sick, or from substances imbued with their effluvia, the system of precaution is changed, and multitudes may become the victims of the error. The converse of this is also equally true. The practical consequences, of the inquiry will justify the prosecution of it to the fullest extent of our limits.

As the question of contagion, in this disease, is important and fundamental, and as the affirmative has been asserted with much confidence, it becomes necessary to consider this point with great attention.

But, before proceeding to offer reasons in detail against the contagiousness of yellow fever, it is proper to premise some general observations on the subject.

A contagious disease is distinguished from all others, by the property of generating or secreting a matter, which, applied by contact, or inhaled with the air by near approach to the sick, or to inanimate substances charged with their effluvia, successively reproduces the same disease. As this contagious matter is secreted by a morbid action of vessels, or a peculiar process of the disease, forming a specific and essential part of its character, it must always be generated when such disease exists; and being generated, and then duly applied or inhaled, its action is altogether independent of external circumstances, such as the state of the air, &c. and must always take effect, unless there be something in the condition of persons exposed to it, which renders them unsusceptible of the impression. This unsusceptibility, depending upon peculiar and unusual circumstances, (except in the diseases which attack the same person but once,) must of course be extremely rare. The small-pox affords an example of this operation of contagion. If forty persons, who have never undergone small-pox, be closely exposed to the effluvia of a number of patients lying ill of that disease in the ward of a small-pox hospital, thirty-nine certainly, and probably the whole number, will be infected. This is an example of a contagious distemper. The contagious matter is the constant and universal product of the disease; and being thus produced, it generally reproduces itself in such as receive it; provided they have not been (in the case of small-pox) previously subjected to its action. The principle of unsusceptibility cannot depend upon the surrounding air, but is to be sought for in the condition of the body that resists the contagion. There are no facts to prove that pure atmospheric air is a neutralizer or destroyer of contagion; every day presents instances of the reverse; and when diffused through an extensive space, air renders it harmless, not by decomposing, but by diluting and dissipating it. On the other hand, none of the truly contagious diseases derive any additional force from impure air; for the greater contagiousness of confined air in cases of this sort, arises merely from the concentration of a greater quantity of contagious matter within a small space. The application of those principles to the subject in question will presently be seen.

It is proper likewise to premise, that the attack of many persons in the

same neighbourhood, or even of whole families, by a reigning disease, affords no proof of contagion; for the intermittent and remittent fevers of the country, which undoubtedly are not progagated by contagion, often attack families and neighbourhoods so generally as scarcely to leave healthy persons in sufficient number to attend the sick. The want of due discrimination between the effects of *vitiated atmosphere* and of *contagion*, is one of the most lamentable deficiencies in the history of diseases.

Some epidemic diseases, such as small-pox, measles, &c. are considered, by universal consent, as *contagious*; others, such as intermittent and remittent fevers, &c. are considered as *non-contagious*. It becomes, therefore, extremely interesting to ascertain the criteria by which this discrimination among epidemic distempers may be clearly and promptly made. The want of precision on this point, has produced much collision of opinion and much contrariety of conduct among physicians and others, The most obvious criterion, and that which is most generally recognized by the common sense of mankind, is the effect of personal intercourse between the sick and the well. Where a disease is truly contagious, this intercourse it would seem, cannot fail to disclose the danger, which was long ago correctly stated in poetical language;

——————— "Obfuntque auctoribus artes:
"Quo propior quisque est, servitque fidelius ægro,
"In partem lethi citius venit."

Ovid. Metamorph. lib. 7.

The agency of contagion in the propagation of the Yellow Fever is rejected for the following reasons.

1. No relation is observed between the source of the supposed contagion, and the spreading of the disease to individuals or families; nor was there ever any successful attempt to trace in regular series the propagation of it to any number of persons, from the first case, or from any single point of infection. If the first ten or twenty cases, which occur in any season, be strictly scrutinized, most of them are found, in their origin, to be distinct and independent of one another. Instead of gradually pervading families, or creeping slowly from one neighbourhood to another, in the track of infection, as is invariably the case with contagious distempers, this disease is often found scattered at distant and unconnected points, and cases start up singly in situations where contagion could neither be traced nor suspected.* The proportion of single cases in the midst of

* Not only the dispersion of cases is adverse to the doctrine of contagion; but the appearance of them in groups in some instances is altogether as much so. Many of the most judicious citizens of New-York were convinced of the origination of the Yellow fever from domestic filth in the year 1798, by the following fact. Between twenty and thirty persons, at the commencement of that destructive epidemic, in a circumscribed neighbourhood at the lower end of John-street, were suddenly seized with the disease in one night, in consequence of a current of putrid and most offensive exhalations from the sewer of Burling-slip. The persons attacked were only such as lived directly to leeward of this blast from the sewer; while many others close in the vicinity, but not exposed to this current, entirely escaped.

families is always great; and the instances of any large proportion of families being attacked were comparatively very rare in the last epidemics. It appears from the records of the Yellow Fever of 1805, in the city of New-York, that there were thirty-one streets of the city, most of which continued to be filled with inhabitants, through the whole season, in which only a single case in each occurred; and in the mass of six hundred cases, reported to the Board of Health in that season, there were only thirty-five houses in which more than a single case was found. If the number of deaths should be supposed to afford better ground of calculation, it will be found that there were forty streets, and those generally crowded throughout the season, in which only one death in each took place: not more than three died in any one house, of which there were only two instances; and, during the whole epidemic, there were only twelve instances of two persons dying in one house.† The great mass of persons attacked with the disease, consisted of such as never had approached the sick, or any other assignable source of contagion; and, on the contrary, as will presently appear, great numbers were exposed to close intercourse with the sick, without injury.

In order to explain this scattered, remote and unconnected occurrence of cases, the advocates of contagion are obliged to resort to the extravagant supposition of the contagion being diffused through an extensive range of atmosphere by the effluvia of the sick, or of the infected clothing or bedding which were supposed originally to have introduced the contagion. It is scarcely necessary to observe, that this is a new and inadmissible doctrine, utterly repugnant to all the principles and laws of the communication of contagion, which have been sanctioned by the experience of ages, and entirely subversive of all the hopes the contagionists themselves can repose on a separation of the sick from the well, or on the most rigid regulations of quarantine. This doctrine is likewise inconsistent with itself. If contagion from a single source can extend itself so far, what inhabitant of a city could possibly escape, when, in the progress of the epidemic, cases are so immensely multiplied, and the disease so extremely diffused? If this contagion can exercise such a destructive activity at a distance, after being so much diluted in the air, what must be the effect of approaching near to its source? If a contagion really existed, capable of retaining its virulence after such extreme dilution in the atmosphere, it would bid defiance to all the barriers of quarantine, be uncontrollable by human means, and finally would depopulate the whole city in which it appeared. Another inconsistency is equally glaring. If this effluvium from a sick body, or from foul clothing and bedding, can be supposed to vitiate the air to such a distance around, it must, after such extensive diffusion, become light and fugi-

† From these reports to the Board of Health, it results that upwards of five hundred, out of six hundred cases of malignant fever which occurred, were single in the respective families; and that more than three-fourths of the deaths which took place in the city, were likewise single in the respective families in which they occurred.

tive, and liable to be blown away by the first breeze. But, how shall we explain the fact, that this same space of air, after the inhabitants are fled, the sick removed, and the houses shut up, continues, till a change of season, to be permanently noxious? Nothing can account for this local, stationary and inexhaustible poison, but the exhalations from the masses of filth and corruption overspreading a large area of ground, forming a vast hot-bed of putrefaction, incessantly teeming with miasmata, and thereby, in despite of currents of air, loading with the seeds of disease every successive portion of atmosphere that sweeps or stagnates over the pestilential surface.

2. The pretended contagion is admitted to produce no effect in our climate, except in particular situations, and at a particular season of the year, when an impure and noxious atmosphere, which ought to be considered as a sufficient cause, is acknowledged to exist. But to consider a disease as contagious, which at the same time exhibits no appearance of that quality but in certain climates, in such climates only in certain places, at such places only at certain seasons, and even at such seasons only after a particular degree of heat and moisture, is undoubtedly to lose sight of all the established properties and laws of contagion.

3. It is admitted that the disease does not spread when the sick are removed from the impure air in which it was contracted. By breathing this impure air, without exposure to the effluvia of the sick, persons are every day attacked; while, on the contrary, without breathing it, however exposed to such effluvia, no person is attacked. The conclusion, therefore, is irresistible, that the impure air is the cause.

4. No communication of the disease was ever observed in yellow fever hospitals, situated at a small distance from the cities to which they belong. No exception to this has ever occurred in any of the numerous seasons of this pestilence at the New-York hospital at Bellevue, the Marine Hospital at Staten-Island, that of Philadelphia, or any other in the United States; provided the malignant air of the city had been avoided. The force of this fact seems never to have been duly considered or appreciated. The numerous retinue of medical attendants, nurses, washerwomen, servants, &c. which belong to a hospital, must be known to every body. How greatly they are all exposed to contagion, if it could be supposed to exist in this case, is equally known. The most malignant degrees of the disease are constantly found in these institutions. The exposure of physicians and their assistants is well understood. The duty of the nurses leads to an incessant and unreserved intercourse with the sick. They pass the greater part of their time, and sleep in the apartments of the sick, the dying and the dead. In lifting, undressing, dressing, administering remedies, and many other modes of assistance, they are very often in actual contact, and commonly within a small distance of the patients. They receive and carry away all excrementitious discharges. Several persons are employed in washing the foul clothes and bedding of the sick and the dead. Not only all these have invariably escaped the disease, but it was likewise remarkable that in the last epidemic of New-York, in 1805, all the persons occupied in the removal of

the sick from the city to the hospital, who in this service went without reserve into the most pestilential quarters of the town, entered the most filthy apartments, and lifted the sick into their carriages dressed in their foulest clothes and sinking under the worst degrees of the disease, escaped without infection.

The nurses at Bellevue Hospital became so entirely free from all apprehensions of the contagiousness of this disease, that they often slept on the same bed with the sick; and it happened more than once, in the course of the season, that a nurse, overcome with fatigue and want of sleep, threw herself in the night, for a little repose, on the bed of a dying patient, and remained there asleep till the patient was dead, and it became necessary to remove the corpse.

In order to account for these facts, the advocates of contagion contend that its activity is confined to *impure air*, and that by this alone it can be *conducted* to the objects of its attack. The yellow fever hospital at Bellevue, belonging to the city of New-York, is not, however, so constructed as to allow the supposition of great purity of the air; and indeed the state of the land-air in the months of August, September and October, cannot be considered as pure, in any part of our country. But admitting the highest possible purity of air in these hospitals, the operation of contagion, if it existed there, could not by such means be avoided. When the naked hands of physicians and nurses are in contact with the skin of the patient, scorched with febrile heat, or bedewed with the matter of perspiration, how can pure air be interposed to arrest the passage of contagion? When they inhale, as they often do, the breath and effluvia of the sick, no man can doubt that such air is sufficiently impure to be the *conductor* of contagion, if it really existed. In all contagious diseases, contact and immediate inhalation of the effluvia and breath of the sick, are supposed to constitute the greatest possible exposure; and in such cases, it is plain, the interposition of air, pure or impure, must be equally unavailing to arrest the evil. Yet in these hospitals persons not only escape this danger, but none was ever known to be infected by it.

In the epidemic of the year 1798, seven persons died of Yellow Fever in the Alms-House of the city of New-York. It was ascertained that they had taken the disease in consequence of going out and breathing the atmospheric poison diffused through the more contaminated districts of the city. Although the house then contained about 800 persons, no communication of contagion took place.

5. The extinction of the disease by cold weather, is an insuperable objection to the doctrine of its propagation by contagion. That the disease in reality depends upon an atmospheric poison, appears from the fact, that all the means which operate to arrest and destroy it, such as cold, heavy rains and high winds, are merely atmospheric agents. The healthy temperature of the human body is the same in all climates and seasons; and febrile heat is not less in winter than summer. Consequently, the morbid process by which the matter of contagion is generated, is under no controul from atmospheric temperature. Hot cli-

mates and seasons are universally held to be unfavourable to the spreading of contagion. The reason is obvious. In warm weather, the doors and windows of the apartments of the sick are kept open, and ventilation is carried to the highest degree. At that season, the effluvia of the body, whether in health or disease, are sooner dissipated, and, of course, can less readily adhere to clothing, bedding, walls, furniture, &c. so as to be retained, and become noxious. In conformity to this, typhus, which is propagated by a poison produced in the clothing, bedding, furniture, &c. of persons living in filthy and crowded apartments, generally prevails and spreads much more in winter, when such apartments are deprived of ventilation. On the contrary, yellow fever, arising from a deleterious principle floating in the atmosphere, and produced by the operation of solar heat upon vegetable and animal filth, ceases to prevail soon after this heat is reduced so low that it can no longer exhale a sufficient quantity of the miasmata of foul ground. But if this disease depended upon contagion, instead of disappearing at the accession of cold weather, when houses are more closely shut up, it would be then more certainly communicated, and more widely destructive.

6. Yellow fever does not prevail in countries, where the heat is not sufficient to exhale the miasmata of foul grounds and other corrupting matters, in the requisite quantity and virulence. We hear nothing of this disease in Great-Britain, Ireland, or France; though it is well known that persons ill of it, and shipping in which it has recently prevailed, very frequently arrive in their ports. The boarding houses in the sea-port towns of these countries, in which seamen arriving from the West-Indies are generally lodged, are known to be often extremely filthy and filled with impure air; as appears from the prevalence and ravages of typhus; yet this impure air in those countries cannot *conduct* the contagion of yellow fever.

7. Many persons, who had contracted the Yellow Fever in New-York, during the several seasons of its prevalence there, died of it at Boston, Albany and other cities at a distance; many likewise at Greenwich, Brooklyn, and other villages in the neighbourhood. In no instances did these victims of the epidemic communicate contagion. In all these places, the air at that season must have been very *impure;* so that it is not the pure air of the country only, which exerts the power of arresting and extinguishing this supposed contagion.

8. The remarkable exemption of Physicians from this disease, provided they attend to a few simple precautions, is also irreconcilable to the doctrine of its contagiousness. In the last epidemic of New-York and Philadelphia, in 1805, this exemption was universal. It is also believed, that no physician suffered from the disease at New-Haven, Providence or Norfolk, in all which cities it prevailed during that season. It is known that physicians neither use nor possess antidotes. Their exposure to the breath, effluvia and contact of the sick, in the season just mentioned, was almost incessant from morning till night. They employed no precaution of dress or covering, no fumigation, no means of destroying, neutralizing or obviating, in any manner, the effluvia of their patients.

The dissection of bodies dead of Yellow Fever, if contagion had existed, would also have formed another source of danger. Many of the physicians of New-York and Philadelphia were frequently engaged in this mode of investigating the disease, and minutely examined bodies in a very advanced state of putridity. The more happy escape of physicians in this last than in former epidemics, is to be attributed chiefly to their having secured a residence in the higher and safer parts of these cities, and to the comparative infrequency of their visits to the districts of envenomed atmosphere; owing to the early desertion of these districts by the chief part of the inhabitants. It is understood, at the same time, that these physicians, in their confidence of the non-contagiousness of the disease, generally passed more time in the apartments of the sick, and were in the habit of making a more deliberate and minute examination of the cases which fell under their care, than in preceding epidemics.

The exemption of the nurses from disease, who attended the sick in the city of New-York, in the epidemic of 1805, was also very remarkable. Upwards of sixty persons were employed, by the Board of Health, to perform this duty. Only four of these died; two others only were sick, and recovered. And it appears, upon inquiry, that such as died or were sick, had been stationed in the parts of the city where the atmosphere was known to be most highly charged with the miasmata of foul ground.

9. The failure of every attempt to arrest the progress of the disease, by the separation of the sick from the well, is also incompatible with the doctrine of contagion. Besides the numerous ineffectual attempts in the city of New-York, the utmost endeavours were used, with the same result, by the Board of Health of Philadelphia, whose members had been purposely selected for this object, from those who embraced the opinion of the importation and contagiousness of the disease. It would be fortunate, indeed, for the purpose of arresting Yellow Fever, if its progress depended upon contagion. This appears from the example of the small-pox, a disease whose contagion is more active, steady and permanent than any other in the world. By a system of quarantine, extremely simple and very little burthensome, this distemper is generally excluded, or, if introduced, immediately arrested and banished, in Boston and other cities of New-England, where its admission and circulation are prohibited by law.

10. The inconsistency and contradiction which constantly attend the application of the doctrine of contagion in this disease, make it altogether inadmissible. To explain one set of facts, it must infinitely transcend the contagiousness of small pox; to suit another, it must entirely forfeit the power of communicating itself by contagion. On some occasions, it is more subtle, penetrating and rapid than the electric fluid; on others, more sluggish and dormant than the grossest matter. Contrary to all other noxious substances, it is often more destructive at a distance, than near to its source; for at one time, it cannot reach a single individual among a great number surrounding the bed of the patient,

and in frequent contact with his person, while at another, it must strike at the distance of several hundred feet.* The noxiousness of the miasmata of foul grounds, exhaled by heat and floating in the atmosphere, explains all these facts, and reconciles all these contradictions.

If it were necessary to add any thing to the evidence of these irresistible facts, it might be subjoined, that Yellow Fever cannot be considered as a contagious disease;—Because, unlike all other contagious diseases, it has no specific character, no definite course or duration, and no appropriate essential or pathognomonic symptom;—Because, the supposed contagion rarely operates singly, and in general depends upon the co-operation of exciting causes;—and finally, Because, the miasmata which produce this disease are more or less noxious as they are more or less concentrated, a property which does not belong to the specific poisons of small-pox, syphilis, &c.

This view of the subject is confirmed and illustrated in a striking manner by the following observations on the subject by Dr. Pinckard. (See Notes on the West-Indies, &c. Vol. III, page 425.)

"Creoles and negroes are not subject to the fever [Yellow] in its continued or most malignant form; but when it does invade them, it more commonly assumes a remittent or intermittent type.—In these classes, the original conformation, aided by a constant exposure to the heat and atmosphere of these regions, has established a due state of fibre, and given to the body a certain congeniality which empowers it to continue its healthy action, amidst all the circumstances of climate and situation.

"Europeans who have resided during a period of several years in the West-Indies, are seldom attacked with the fever in its continued form; but when it seizes them, it commonly assumes the type of a remittent. In persons of this class, the body, from long exposure to the climate, has become creolisé, or acclimaté, approaching to the conformation of the natives, by having the original firmness of the fibre reduced to the appropriate standard for continuing the healthy action, under exposure to preternatural heat.

"The strongest men—those of the most dense or rigid fibre, are most subject to the high degrees of the continued, or *yellow* fever; and are most frequently, and most rapidly destroyed by it.

"Women, children, convalescents from former malady, and those who have been reduced by the use of mercurial remedies, are less frequently the objects of its attack; and when it does seize them, it is commonly milder, and less rapid in its progress. In these classes, the state of the animal fibre, either from original conformation, or from eventual cir-

* While it is admitted that contagion cannot operate in Yellow Fever Hospitals, and while this inactivity of it is ascribed to the absence of impure air; it is, at the same time, gravely asserted by some that a person going on board of a vessel, lying in a situation where the air is much more pure than it can possibly be at a hospital, even though there exist no sickness on board of such vessel, may still derive contagion from it, and experience all the active and malignant operation of such contagion, notwithstanding this purity of the surrounding atmosphere.

cumstances, more nearly approaches to that of the creoles and natives.

" In North-America, the inhabitants, who constantly reside in the most southern states, are seldom attacked with the fever in its most violent, or continued form; while those of the north-east states are destroyed by it in great numbers: but, even in these states, it is remarked that the fever more readily seizes strangers from Europe, or peasants from the interior provinces, than the natives of the towns in which the disease prevails.—These facts are peculiarly striking, and they seem to admit of ready explanation. The inhabitants of the southern states, from residing in constant heat, are acclimatés, and, in constitution, approach nearly to the creoles or natives of the West-Indies: but those residing in the more northern states, although exposed to a very high degree of heat during the summer, can never become creolisés, on account of the intervening winter, which annually renews the predisposition, and creates a susceptibility of the disease—still, from residing, during part of the year, in excessive heat, and remaining, at all times, in the atmosphere of their towns, even the inhabitants of the place where the disease prevails, are, in some degree, less susceptible of the most malignant form of the fever than strangers from Europe, or peasants from the provinces, whose more dense and rigid fibre renders them in a peculiar manner predisposed.

" From these remarks, it would seem that the presence of contagion is in no degree necessary to the production of this fever. Indeed, its invasion is governed by circumstances very opposite to all the known laws of contagion: for, in proportion as the body approaches the creole structure, so is it able to support the change of temperature, and to resist the fatal effects of the seasoning malady. If the constitution, either from natural organization, or from long residence, be assimilated to the climate, *i. e.* if it be reduced to the common standard of the creoles, it has nothing to apprehend from the disease; but if it be not, the fever will, assuredly, make its attack, without waiting for any such cause as contagion.

" Moreover, if it can be ascertained that certain classes of people are most liable to be attacked, and if it can be proved that there is a certain gradation, according as they have been more or less exposed to the influence of climate, it were equally unnecessary and unphilosophical to call in the aid of a power, the application of whose laws it were impossible to reconcile with the appearances observed. No disease of known contagion is influenced by the circumstances which are daily seen to govern the progress of the yellow fever; if, therefore, we are to regard contagion as the parent of this disease, it must be a contagion of a very uncommon and peculiar appetite; for it is a circumstance both singular and unprecedented, that an active and wide-spreading contagion, prevailing in any particular country, should, expressly, avoid the inhabitants of that country, and only lie in wait for strangers; and, further, that should these not chance to arrive, even for many years, this insatiate devourer, not relishing the food of her own country, should not once require sustenance;

nor stir abroad for support, but content herself to fast, throughout the whole period, and again rush forth, with undiminished vigour, the very moment that strangers appear! I think I might say, with the greatest correctness, that if no stranger, from a colder climate, should visit the West India colonies for the space of five, ten, or any given number of years, that no instance of the yellow fever, distinct from the bilious remittent fever of the country, would be known during that period; yet, if a body of men, unaccustomed to the climate, should arrive from Europe in the month of July or August immediately succeeding, a considerable proportion of them would be seized, and probably destroyed by this disease, before they had commemorated the first return of a new year: but can it be supposed that a most subtile and active contagion would thus remain latent, for any specified term, amidst whole hosts of natives, suddenly, and, as it were, impulsively, resume all its destructive powers, as soon as a body of more robust foreigners should come within its reach?"

The late learned Dr. Hunter, one of the members of the National Board of Health, of Great Britain, offers the following argument in support of his opinion of the non-contagiousness of Yellow Fever. "The strongest proofs of this, in my opinion, were to be met with in private families, where the son, the brother, or the husband, labouring under the worst fevers, were nursed with unremitting assiduity by the mother, the sister, or the wife, who never left the sick either by day or by night, yet without being infected. That such near relations should take upon them the office of a nurse, is matter of the highest commendation in a country, the diseases of which require to be watched with greater care and attention than can be expected from a servant. They are under no fears of the fever being infectious, and I never saw any reason to believe it to be so, either in private families, or in the military hospitals." That Dr. Hunter came to this decision after a full and mature consideration of the importance of the subject, will appear from the following remarks: "There is hardly any part of the history of a disease, which it is of more consequence to ascertain with accuracy, than its being of an infectious nature, or not. Upon this depends the propriety of the steps that should be taken, either to prevent it, or to root it out. It is productive of great mischief to consider a disease as infectious, that really is not so; it exposes such as labour under it to evils and inconveniencies, which greatly aggravate their sufferings, and often deprive them of the necessary assistance. They are neglected, if not shunned, and at the time they require the greatest care and attention, they have the least." (See Observ. on the Diseases of the Army in Jamaica, page 177 & 178.)

Can the Yellow Fever be imported and exported?

NOTWITHSTANDING the apprehensions on this subject, entertained by many respectable persons, both in Europe and America, it is believed that the negative of this question may be indubitably maintained, for the following reasons.

1. The non-contagiousness of the disease, if admitted, must entirely destroy the belief of its introduction from abroad. It it impossible to conceive that it can be conveyed across the ocean, and propagated in the cities of the United states, or elsewhere, unless it possess the power of successively re-producing itself by communication of contagion from one person to another.

2. If the alleged importation were possible in any case, it might happen at any season of the year. In the active sea-ports of the United States, shipping from the West Indies are very frequently arriving at all seasons; and it is known that yellow fever may be found in those islands at any period of the year, when they are visited by strangers from the higher latitudes: yet the supposed importation is always confined to that period of the summer and autumn, when local and domestic causes sufficient, as it is conceived, to produce the disease, are known to exist.

3. If yellow fever could be introduced from abroad, it is impossible to explain its non-appearance in the sea-ports of the United States for a long series of years, when no means were used to secure its exclusion. For more than fifty years preceding 1795, no importation of the disease into the city of New-York was suspected; and it is indeed uncertain whether before that year, the apprehension of its importation there, at any period of the eighteenth century, had attracted much notice. The advocates of importation generally assert, that periods of war in the West Indies are most apt to occasion its introduction into this country. Yet we hear nothing of its being brought to the port of New-York during the war of 1756, or that of the American Revolution. In the former of these wars, the mortality attending the successful expeditions against Martinique, Gaudaloupe and the Havanna, was almost incredibly great. Only a very small part of the victorious troops were alive three months after their conquests. Equally fatal were the malignant fevers of the West Indies in the war of the American Revolution. Dr. Hunter* informs us, that of 5,000 troops who took possession of St. Lucie, scarcely a man of the original number remained at the end of one year; although the sword of the enemy had destroyed an inconsiderable amount. The mortality continued as great in the subsequent years. From the 1st of May 1780, to the 1st of May 1781, the number of dead was equal to the average strength of the garrison during the year. Of the troops sent from Jamaica upon the expedition against Fort St. Juan, scarcely a man returned in health. During this period, the intercourse

* Obfervations on the Difeafes of the Army in Jamaica.

between the West Indies and the port of New-York, must have been extremely frequent. Dr. Blane† states, that in the course of the war of our Revolution, nearly 18,000 sick were landed at New-York from the British fleets; that 11 sail of the line arrived there early in September 1780, from the West Indies; that 26 sail of the line arrived there at the same season in 1782, likewise from the West Indies; and that from each of these fleets, a great number of sick, afflicted with malignant fevers, were sent to the hospitals at that port. It is also known that a similar fleet arrived there in the beginning of the autumn of the year 1781. During all this period, notwithstanding the ravages of yellow fever in the West Indies, and the conveyance of so many sick to that port, we hear nothing of the importation of the disease. And yet, at that time, no quarantine-regulations existed there.

The contingencies by which yellow fever might have been imported, through the medium of commercial shipping or of naval and military expeditions, if such importation were possible, must very often have occurred in a sea-port like New-York, where such extensive communication has been so long maintained with the West Indies. A more frequent introduction of the disease, therefore, according to the doctrine of importation, as now held, must have been inevitable. But as this did not take place for such a length of time, and under circumstances so likely to produce it, the conclusion against importation becomes exceedingly strong.

On the contrary, as the history of pestilential epidemics in all ages and countries demonstrates that they are subject to frequent revolutions, as to the periods and places of their prevalence, the variety of their symptoms, and the degrees of their malignity; it is much more easy to account for changes in such diseases, as they locally or periodically occur, than for any great diversity or fluctuation in the circumstances or contingencies, which determine their importation from abroad.

4. No importation of this disease, so as to become epidemic, was ever known in any port of Great Britain, Ireland or France. The vast amount of shipping, as was observed before, which arrive at those ports from the West Indies, is well known; and, that they often arrive in a very sickly condition, is equally known. The filth and impure air of those ports are admitted on all hands, and the effects of them are experienced in the destructive fevers of a different description which frequently prevail; and yet, for want of the atmospheric heat and other local circumstances requisite in the generation of yellow fever, they are happily exempt from its epidemic prevalence.

5. The appearance of yellow fever in many of the interior parts of the country, inaccessible to foreign contagion, confirms the opinion of its domestic origin, while it entirely invalidates that of its importation. There is not a State in the Union, which has not afforded evidence of the production of the disease, in situations where importation was imprac-

† Observations on the Diseases of Seamen.

ticable. In the course of the epidemic season of 1805, a malignant fever, in all essential points the same as the yellow fever, prevailed in many parts of the State of New-York and caused more mortality, in proportion to the population of the district, than took place in that city.

6. A comparison of the summer and autumn of the year 1804, with the corresponding seasons in 1805, the period of the last epidemic at New-York, will go far to shew the dependence of the Yellow Fever on the condition of the atmosphere, and of course, to overthrow the doctrine of importation. The summer of 1804 was mild and cool, to a remarkable degree, on all the Atlantic coast of the United States, lying to the northward of the Carolinas. In South-Carolina and Georgia, the heat was unusually great. All the Atlantic cities north of the Carolinas, without exception, entirely escaped the epidemic in that season: whereas at Charleston and in some parts of Georgia, it prevailed with great mortality. On the contrary, the summer of 1805 was remarkable for the duration as well as the intensity of heat, along the whole coast of the United States. And the consequence was, not only that nearly all the Atlantic cities were visited with pestilence, but, what was still more remarkable, that in several of them it made its appearance within forty-eight hours, or nearly, of the same time; an occurrence which cannot be explained on the contingency of importation, and is only to be satisfactorily accounted for from the state of the atmosphere. Dr. Caldwell, of Philadelphia, in a comparative view of the temperature of different seasons, has ably demonstrated the influence of high heat in the production of the Yellow Fever.

7. The occurrence of similar diseases in other parts of the world, under similar circumstances, where contagion introduced from abroad cannot possibly be suspected, is also adverse to the doctrine of importation. In making the circuit of the globe, on the parallels of latitude nearly or exactly corresponding with ours, we pass over countries which, from the earliest records of history, have been frequently visited with the ravages of this disease. Spain and Italy afford striking examples. The city of Rome, in particular, though its elevated situation is generally salubrious, is annoyed by a marshy spot at the feet of two of its hills, along the margin of the Tiber, which has been sickly and pestilential from the origin of the city. While the streets on the hills, like Broadway and other high grounds in the city of New-York, enjoy a salubrious air, the spot of marsh just mentioned, together with a small extent of *made-ground*, (for the noxiousness of *made-ground* has been felt at Rome as well as at New-York,*) corresponding with the marshy spots and vastly more extended

* Proofs of this might be adduced from Lancisi and other medical writers of Rome. The following lines from Ovid are sufficient to establish the fact:

Hoc, ubi nunc fora sunt, udæ tenuere paludes;
Amne redundatis fossa madebat aquis.
Curtius ille lacus, siccas qui sustinet aras,
Nunc solida est tellus, sed lacus ante fuit.
Quà Velabra solent in Circum ducere pompas,
Nil præter salices cassaque canna fuit.

Ovid. Fast. Lib VI.

space of *made-ground*, along the margin of the East-River in New-York, has produced, from time immemorial, malignant and mortal epidemics. And the medical historian of these facts (the celebrated Baglivi) expresses his astonishment that so small a distance, as that intervening between the elevated and depressed portions of ground, should make such a difference in the qualities of the air. As the Tiber is not navigable for sea-vessels, the importation of their pestilential epidemics at Rome was never suggested.

8. The inefficacy of all the various modifications of quarantine hitherto devised in the United States, confirms our disbelief of importation. In the port of New-York, as well as that of Philadelphia, a rigid system of quarantine has been in operation for many years; and there is no doubt of its having been vigilantly and faithfully executed. Indeed, the experience of quarantine in the United States exhibits little in favour of its practical efficacy; for though, during the last ten years, it has been scrupulously enforced in several ports, we have heard ten times more of imported contagion and of its ravages, at these very ports, during that short period, than for an hundred years before, when no regular quarantine was established.

The source of mistake, on the subject of importation, seems to consist in not distinguishing *a febrile poison generated by heat and filth in a vessel*, from *contagion taken up in a foreign port, and successively communicated from one person to another*. The construction of vessels disposes them to the collection and retention of filth, and renders cleansing and ventilation extremely difficult. The quality of cargoes and provisions, the inattention of seamen to cleanliness, the crowded manner in which they often live, the unsuspected and inaccessible situations in which corrupting substances may lie concealed, render shipping, independently of the hazards of the element on which they move, the most dangerous of all human habitations. It is no wonder, therefore, that they should become unhealthy, when they pass into warm latitudes, or lie in our harbours in the hot season. In no situation is a malignant fever more apt to originate than in a ship. A vessel that never left our ports, or that has remained in them for years, may become foul, and thereby generate and emit a deadly exhalation. Whether malignant fever arise from filth ashore or on shipboard, the principles and process, by which the evil is produced, are still the same. On what ground can a disease be said to be *imported*, which has no other relation to a foreign country, than that of being generated in a vessel which has lately visited that country? The foreign country, the outward and homeward voyage, are circumstances of no moment in determining the origin and character of the disease; to account for these, we must consider the filth, the moisture and heat, which, concurring to a certain degree, are destructive to mankind at all times, in all situations and under every condition. And a fever originating under such circumstances, can no more be pronounced *imported*, than a fracture of a limb happening at sea can be called an *imported fracture*.

It has been supposed by some, who regard only one aspect of the sub-

ject, that the doctrine of importation alone can explain the more frequent recurrence of malignant epidemics in the United States during some late years. But the difficulty again returns with unabated force; and it still remains to explain, why importation has become so much more frequent and destructive of late than formerly. If it be thought impracticable to throw light on that peculiar constitution of the air, which determines the prevalence of yellow fever at one time more than another; it is equally impracticable to ascertain the qualities of the air which produce malignant distempers of the throat, the dysentery, and other mortal epidemics, (which are undoubtedly of domestic origin) for a season, or for a term of years, and then allow them to disappear.

It has been said, that the belief of the yellow fever originating in the United States, would be destructive to their commerce and prosperity. But if the appeal must be made to interest rather than truth, let us contrast the effects of the two opinions, as they influence our intercourse with foreign nations. By truly describing the disease, and exhibiting the proofs of its local origin and non-contagiousness, we convince foreign nations that it is a misfortune limited to ourselves, that it cannot endanger their safety, and that it only claims their sympathy and regrets. By asserting the importation and contagiousness of it, the evil immediately swells to an indefinite and incalculable extent, and we alarm all nations with the fear of its being, in turn, exported to them. After the experience already gained, neither they nor we can cherish any rational hope of hereafter excluding it, by regulations of quarantine. Our intercourse with the West Indies, and with all other tropical countries, will be daily extended, and if importation were possible, the chances of it will be every year progressively multiplied. On the ground of importation, unless trade be totally forsaken, our situation is hopeless.

In rejecting the doctrine of importation, the benefits of quarantine are by no means intended to be undervalued. The generation of pestilential disease in foul vessels is undeniable; they are certainly a very frequent source of malignant sickness: and all persons concerned in shipping are interested in a careful examination of them. There ought, undoubtedly, to be some mode of ascertaining whether a vessel may be safely approached by people in business, or whether she may be likely to diffuse pestilential vapours among all who come within their reach. Quarantine is also one of the most humane regulations in favour of seamen, who are confessedly a very useful and necessary class of the community. It interposes between them and the carelessness or cruelty of their commander, and makes it his interest to preserve their lives and health. And while it might be organized so as to answer all these purposes efficaciously, it might also be properly stripped of some of its useless and burthensome appendages.

If the facts and reasonings now adduced to prove the non-contagiousness and non-importation of yellow fever, be well founded, it results that our epidemics are local, domestic, and as incapable of exportation to foreign nations, as the remittent fever of the country. It is to be lamented that the reverse of this opinion has made so deep an impression in Europe;

and that the Governments of that quarter of the world have suffered themselves so lightly and hastily to embrace doctrines and legislate on principles contradicted by all former experience. It is now more than 300 years since they became acquainted with America. And although the first discoverers of the new world, as well as most succeeding adventurers, have largely shared the effects of the baneful climate of the West Indies; it is only of late that apprehensions have been entertained of importing into Europe the malignant fevers of those islands. The shattered remains of fleets and armies had often returned home to Great Britain and France, in the most sickly state, after encountering all the horrors of yellow fever, without once communicating that disease. But what transmutation can yellow fever undergo in the United States, which renders it exportable to Europe from them, but not directly from the West Indies?

It affords some apology indeed for Europeans, that the information concerning this subject, upon which they have acted, was derived from the United States. The acts of our State Legislatures, the proceedings of our Municipal Bodies and Boards of Health, the proclamations of our Magistrates and a variety of other public documents, have all a tendency to impress the same opinion. We have held up to foreign nations an indigenous and local disease, growing up from the infelicities of particular situations, or from neglects of police, and entirely incommunicable from one person to another, as highly contagious, capable of exportation to distant countries, and consequently alarming to the safety of the whole commercial and civilized world. We cannot transplant the disease from the city of New-York to the neighbouring villages of Greenwich, Brooklyn, or Newark; and yet it is believed we can convey it 3000 miles across the pure air of the Atlantic. Whole hospitals of patients, labouring under the most malignant forms of the disease, with all the foul apparel, bedding, &c. polluted with the excrementitious discharges and other filth of the sick, the dying and the dead, cannot emit an atom of contagion; and yet we pretend to dread the infectiousness of a sailor's jacket or handkerchief, or even of the cordage and timbers of a vessel. Under the influence of this phantom of contagion, we have instructed the Europeans to enact laws and regulations, sanctioned by the highest penalties, which retard and oppress our commerce, and subject our shipping in their ports to the most grievous detention. To crown the whole of this injury and humiliation, we have instigated them to place the people of the United States, by late extensions of quarantine, on the same footing with the degraded and miserable inhabitants of Barbary, Egypt, Syria, the Archipelago, Constantinople and other parts of the Levant. And all this has been done, in defiance of clear and luminous facts, and in the face of long, reiterated and ample experience.

For much learned and instructive illustration of the principles of Quarantine, the reader is referred to several papers on that subject by Professor Mitchill, in the different volumes of the *Medical Repository*.

Is the Yellow Fever found in the interior parts of the Country?

In addition to the former remarks on this subject, it is proper to state, that sporadic cases of this disease are occasionally observed in all parts of the country. They are found more frequently and in greater number in low and marshy districts, near lakes, mill-ponds, swamps, &c. The most respectable physicians in the country so universally concur in this observation, that it would be unreasonable to contest the fact.

In some of the more exposed situations, and after very hot and damp summers, the yellow fever often assumes an epidemic appearance in the country. The malignant disease at Catskill, in this state, in the year 1803, (see *Medical Repository*, vol. 8, page 105,) affords an instance of this kind. In the year 1793, it prevailed in many parts of the country in the eastern, middle and southern States, where no suspicion of contagion could exist.

The venerable Dr. Anthon, of the city of New-York, whose accurate acquaintance with the pestilential epidemics of that city enables him to decide in the most satisfactory manner, declares, he has often seen the same disease in the interior country, and particularly in the low situations near the river *Illinois*, after an extensive inundation of that river, succeeded by hot weather.

Mr. Volney, (see his View of the Climate and Soil of the United States,) found yellow fever in several parts of the interior western country, during his travels in America, and describes the disease with so much accuracy and clearness, that no doubt of his testimony can be entertained.

Out of a great mass of particular instances of the appearances of yellow fever in situations inaccessible to foreign contagion, the following will be selected.

Mr. Andrew Ellicott, (see his Journal of a Voyage, &c.) *gives the following description of a small town on the river Ohio, and of the appearance of Yellow Fever there.*

"The village of Galliopolis is a few miles below the mouth of the Great Kanhaway, on the west side of the Ohio river, and situated on a high bank; it is inhabited by a number of miserable French families. Many of the inhabitants, this season, fell victims to the yellow fever. The mortal cases were generally attended with the black vomiting. This disorder certainly originated in the town, and, in all probability, from the filthiness of the inhabitants, added to an unusual quantity of animal and vegetable putrefaction in a number of small ponds and marshes within the village.

"The fever could not have been taken there from the Atlantic States, as my boat was the first that descended the river after the fall of the waters in the spring: neither could it have been taken from New-Orleans, as there is no communication, at that season of the year, up the river, from

the latter to the former of those places: moreover, the distance is so great, that a boat would not have time to ascend the river, after the disorder appeared that year in New-Orleans, before the winter would set in.

"The prevailing diseases on the lower part of the Ohio, on the Mississippi, and through the Floridas, are bilious fevers. They vary in their forms according to the state or force of their remote and exciting causes: some seasons they are little more than the common intermittents and remittents which prevail in the middle States, but in others they are highly malignant, and approach nearly to, if not become the genuine yellow fever of the West Indies.

"Gen. St. Clair, who had the advantage of a medical education, and is, moreover, a gentleman of a discriminating mind, and distinguished talents, has assured me, 'that he is well convinced the yellow fever is an endemic complaint in a large portion of our south-western country, where he resided as Governor a number of years.'"

The following fact is communicated by Dr. Watkins, from his personal knowledge.

There is a village called *New-Design*, about fifteen miles from the Mississippi, and twenty miles from St. Louis, containing about forty houses and two hundred souls. It is on high ground, but surrounded by ponds. In 1797, the yellow fever carried off fifty-seven of the inhabitants, or more than a fourth. No person had arrived at that village from any part of the country where this fever had prevailed, for more than twelve months preceding. Our informant resided in the village at the time; and, having seen the disease in Philadelphia, he declares it to be the same that prevailed at New-Design. He also mentions an Indian village depopulated by the same disease two or three years before.

See Medical Repository, vol. 4, page 74.

Fever, with black vomiting, in the middle part of Pennsylvania, west of the Susquehannah.

"The fever which prevailed, in the autumn and winter of 1799 in Nittany and Bald-Eagle Valley, in Mifflin county, Pennsylvania, proved, in a number of cases, mortal. Bald-Eagle Valley, situated about 200 miles N. N. W. of Philadelphia, is low, abounding with much stagnated water in ponds, which, from the dryness of the season, became very putrid and offensive to the smell. Near to these waters the fever prevailed with great malignity. It was ushered in by chills, with pains in the back, limbs and head, which, in 48 or 60 hours, carried off the patients.—They discharged vast quantities of filth from the stomach, of the consistence and appearance of coffee-grounds, so offensive in smell as to produce nausea, and even vomiting, in the attendants. The fæces also had the same appearance. In many the disease terminated by profuse discharges of blood from the anus and vagina. *Ibid, p. 75.*

What are the Relations and Differences of Yellow Fever and Typhus?

The miasma, which excites Yellow Fever and all the inferior grades of disease termed Remittents and Intermittents, is emitted from dead animal and vegetable substances, immersed in a certain degree of moisture, and undergoing decomposition by means of solar heat. Hence these diseases are found in the neighbourhood of low and swampy grounds, known to abound in this kind of filth, and at that season when such filth is powerfully acted upon by heat; or they are found in large and crowded cities, where these pernicious substances are collected in large masses, and where the heat, from a variety of causes, rises much higher than in the adjacent country. In consequence of the quantity of these putrefying materials which overspread a swampy soil, or become accumulated within the area of a populous town, together with the high heat before mentioned, a large portion of the incumbent air is rendered noxious by this miasma, and a frequent result is epidemic disease. While the warm season continues to advance, and the filth remains in a condition to exhale this poison, sickness rages with increasing violence, acquires additional virulence and a more widely-spreading malignity. At length this miasma banishes or overpowers all other causes of disease within the range of its activity, usurps their places, and thereby forms what is called an epidemic constitution. This view of the subject is confirmed by the consequences of a reduced temperature. No sooner is the atmospheric heat diminished to the degree which is called cool weather, and especially to the degree of frost, than this evil, constantly dependent on heat for its origin and progress, begins to subside, and speedily vanishes. Solar heat, therefore, operating on masses of filth exposed to the open air, is the principal agent in producing the miasma of Yellow Fever.

On the other hand, the miasma of Typhus, while it bears an obvious relation to that just described, exhibits also many important differences. Typhus is generally, and, it is believed, always originally, the pestilence of poverty, of low life, of crowded habitations, of personal and domestic filth. In the evolution of the miasma of Typhus, the matter of perspiration, and, generally, of all the excretions of the human body, constitutes the material, and animal warmth supplies the degree of heat necessary to prepare and set loose the poisonous gas. No large masses of animal and vegetable filth, exposed to the air and solar heat, are requisite to the creation of the typhous miasma; for it is diffused only a few feet from its source, and the general atmosphere of cities or neighbourhoods is never contaminated by it; but, in order to find it, we must examine the dress and persons, or the interior economy of the dwellings of the miserable beings by whose indigence, negligence and filthiness it is immediately generated. The excesses of solar heat are not wanted to ripen this destructive evil; for the heat of the human body, in contact with dress, bedding, furniture, &c. loaded with animal excretions, and rarely changed, washed or ventilated, is fully sufficient to account for the

formation and evolution of this poison. Hence the heat of summer, so far from being necessary to produce the miasma of Typhus, is altogether opposed to it, by inducing that freedom in the ventilation of houses, clothes, bedding and furniture, which, by diluting, destroys it in the germ. Typhus, therefore, is commonly a disease of cold climates or seasons, where the habitations of the poor and the filthy are crowded and shut up, and where the exhalations from human excretions, acted upon by animal heat are not dissipated nor diluted by the admission of fresh air.

If this view of the process of nature in the constitution of these febrile poisons be correct, it will not be deemed improper, to attempt to distinguish and characterize them respectively by denominations which point to their several sources and modes of production, and thereby express their relations as well as their differences.

Assuming, therefore, the origin and modes of production of the two species of miasmatic poison which have been just described, they must be considered as gaseous fluids floating on the surfaces or surrounding the bodies from which they are respectively exhaled; and hence, like the ethereal fluids of magnetism and electricity, they may properly be called *miasmatic atmospheres*.

In order to distinguish these two *miasmatic atmospheres*, and, at the same time, duly to fix in the mind the impression of the origin and production of them, it is judged expedient to designate each by terms which will invariably express the process of nature in their formation. As the Greek language has been generally resorted to in the framing of scientific nomenclature, I shall employ the adjective ΚΟΙΝΟΣ, *common* or *public*, to denote the one species of miasma, and ΙΔΙΟΣ, *personal* or *private*, to denote the other. The application of these terms will be readily understood. That portion of air charged with miasmata exhaled by solar heat from the surface of swampy grounds, or from masses of filth overspreading the open area of cities, according to this distinction, is denominated *Atmosphæra Koino-Miasmatica*. And that other small portion of air, contaminated by miasmata emitted from and surrounding the body, clothes, bedding and furniture of persons immersed in the filth of their own excretions, and of those associated in the same family with them, accumulated, long retained, and acted upon by animal heat, is denominated *Atmosphæra Idio-Miasmatica*. Or, in other words, the *Koino-miasmatic atmosphere* is that which is derived from a *common* or *public* mass of putrefying matter, expanded to the solar influence; while, on the contrary, the *Idio-miasmatic* is that derived from a *personal* or *private* source, being produced from the filth of individuals and their habitations, and diffused around them only for a small distance. The former of these atmospheres seems to be appropriately termed* *Koino miasmatic*; because the pernicious materials which create it lie open to public view, and may properly be called *public nuisances*; are collected and suffered to become

* Thofe who conſider theſe terms as uncouth and unfit for common uſe, may diſtinguiſh theſe febrile poiſons by the more ſimple and familiar titles of *local miaſmata* and *perſonal miaſmata*.

virulent by public remissness and negligence; form a noxious power which affects the whole adjacent community, and, compared with typhous miasma, is of considerable extent; and because they properly come under the notice of the magistracy or police, as being a source of public mischief. The latter of the atmospheres in question is properly called *Idio-miasmatic;* because the pernicious material from which it is derived is made up of excretions from the bodies of individuals; is generally the result of personal uncleanliness and domestic filth; is, when compared with the former, diffused only to a very short distance from its source; and thus adhering to the bodies and clothes of individuals, or to the bedding and furniture of private houses, cannot so readily fall under the notice or cognizance of the public authority.*

The reader will observe that the denominations stated above have a principal respect to the source from which the putrid materials are derived, which, when acted upon by heat, emit the two kinds of miasmata. It occurred to me that, as solar heat chiefly operates in the one case, and animal heat in the other, the denominations might, perhaps, with equal propriety, be drawn from the respective sources of the caloric employed in the evolution of these miasmata. But further reflection induced me to adhere to the first impression. Solar heat, as one of the general blessings of the world, may be properly said to be *common* or *public;* and animal heat, belonging to the body in which it is evolved, may justly be considered in a *personal* or *individual* sense. The terms which have been selected are therefore still supposed to be sufficiently appropriate, whether respect be principally had to the quality and situation of the putrid materials, to the source of the heat, or to the extent of space in which the miasmata may be diffused.

If this view of the subject be correct, it will follow that the two kinds of febrile poison just described will produce corresponding kinds of febrile disease, one of which may be distinguished by the title of †*Pyrexia Koino-miasmatica*, the other by that of *Pyrexia Idio-miasmatica*. Under the former, as was said before, will be included the Oriental Plague, Yellow Fever, and all the inferior grades called Remittents and Intermittents; while under the latter will stand all the varieties of Typhus.

* The febrile poison which is so frequently generated on board of ships, and thereby gives colour to the opinion of contagion and importation, is sometimes *Koino-miasmatic*, sometimes *Idio-miasmatic*. Vessels abounding in vegetable and animal filth, and navigating the warm latitudes, or arriving in port during a hot season, will be apt to generate the former species of miasma; while such as fail on long voyages, and are crowded with passengers, who neglect or are deprived of the means of cleanliness and ventilation, will be chiefly liable to produce the latter.

† The word *Pyrexia* is here preferred to *Febris*, or *Fever*, first, for the sake of preserving uniformity of language in the choice of these terms; and, secondly, because *Febris*, as used by the nosologists, does not seem properly adapted to the purpose. Dr. Cullen gives the following character to his order of *Febris:* "Prægressis languore, lassitudine, et aliis debilitatis signis, *pyrexia*, *sine morbo locali primario*." The existence of Fever, according to this description, *without a primary local affection*, appears to be doubtful, if not improbable.

It would be a subject of curious and interesting inquiry, how far these different febrile poisons are susceptible of being blended, and thereby of producing effects of a mixed kind; and likewise how far the *Idio-miasmatic atmosphere*, by means of high solar heat and other concurring circumstances, is capable of conversion into the *Koino-miasmatic atmosphere*. Instances of the latter occurrence, it is believed, might be adduced, and satisfactorily substantiated.

If the account here given of the origin of these Miasmatic Diseases should be found conformable to truth, it becomes easy to explain the fact of *Koino-miasmatic* epidemics being only observed in warm climates or seasons. We are hence also enabled to explain the reason of Typhus being chiefly a disease of temperate or cold climates, of its generally prevailing in the winter and other cold seasons, and of its appearing so seldom within the tropics. The heat of the human body, being the same in all climates and seasons of the year, must certainly act with more force on the long-retained excretions of the system, adhering to the skin, clothes, bedding and furniture of the indigent and filthy, shut up in their small, low, crowded, uncleanly and unventilated dwellings, in cold climates, or during the cold seasons of the year.

Many physicians, to whose opinions much respect is due, and who firmly hold the doctrine here stated concerning the *Koino-miasmatic* diseases, cannot be induced to give up the notion of the contagiousness of Typhus. As the decision of this question affects a doctrine of great importance, it appears to be justly entitled to attention. But, before entering on the question, whether Typhus be a miasmatic or contagious disease, it will be necessary strictly to define what is here meant respectively by contagion and miasma. By contagion is understood a noxious matter, produced by organic action of diseased human bodies, emitted from such bodies or from substances which have been in contact with them, and causing a similar disease in persons to whom it is applied. Of such contagion the small-pox presents the most unequivocal example. By miasma is meant that noxious exhalation which arises from dead animal and vegetable substances, or either of them, undergoing decomposition, and which is the spontaneous result of attractions and repulsions conferred by nature on the elementary particles of which it is composed. Contagion, therefore, is a poison of animal production, and miasma a poison of chemical production.

That the remote cause of Typhus is a miasma or chemical poison, and not a contagion, seems to be proved by its not depending on the disease itself for its origin, but being occasionally generated wherever the requisite circumstances happen to coincide. Dr. Cullen observes, (First Lines, vol. I. p. 70,) "that the effluvia constantly arising from the living human body, if long retained in the same place, without being diffused in the atmosphere, acquire a singular virulence." And again, (p. 71:) "It is probable that the contagion arising in this manner is not, like many other contagions, permanent and constantly existing, but that, in the circumstances mentioned, it is occasionally generated." Other authorities, if necessary, might be brought in support of this opinion.

This admission is greatly unfavourable, if not fatal, to the doctrine of the contagiousness of Typhus. The occasional generation of the disease *de novo* is proof of its arising without contagion; for contagion being a morbid secretion, cannot exist previously to the disease which engenders it; and if miasma, thus occasionally generated, can produce Typhus, why may not the same agent, by a continued and progressive generation, wherever the materials requisite to its formation exist, go on indefinitely to propagate the disease? To deny this, and to insist on the successive propagation of Typhus by means of contagion, unless clear proof be alleged, is unphilosophical; as it supposes the operation of two causes, when one only is proved to exist, and when that one is sufficient to account for all the phenomena. Many clear cases of the operation of miasmata in producing Typhus, and of the absence of contagion in the same cases, might, if necessary, be adduced. The memorable Black Assizes at Oxford, in 1571, furnish an instance of this. Many of the court and jury were infected by miasmata exhaled from the filthy clothes and persons of the prisoners just brought out from their dungeons, though these prisoners were not sick themselves; and no other persons were afterwards infected by the sick, though the disease was extremely malignant and fatal. A similar occurrence took place at the sessions of the Old Bailey in 1750.* And Dr. Haygarth, of Bath, in England, one of the most credulous contagionists of the present time, admits that a typhous patient, removed from the filthy dwelling where the illness was contracted, stripped of infectious clothing, thoroughly washed and cleansed, and then lodged in a spacious and ventilated chamber, seldom or never communicates contagion to the attendants.† This is, in effect, to say that, when all existing miasmata are dispelled, and the means of generating more are precluded, the danger of infection no longer exists. But what effect would washing and ventilating be expected to produce, during the course of the Small-Pox, towards annihilating the contagion?

The practical writers inform us that the contagion of Typhus, as it arises from *fomites*, is more powerful than as it arises immediately from the human body. This fact is easily explained on the supposition of the morbid principle, in this instance, being a miasma chemically constituted; for the more perfect the combination of the elementary particles composing a chemical poison, the more perfect, that is, the more virulent, will the poison be rendered. But on the supposition of the morbid principle of Typhus being an animal poison, secreted by vascular action, the augmented virulence of fomites, as stated with respect to this disease, is altogether inexplicable. Animal poisons are universally in the most active state as they immediately issue from the bodies which produce them. The virus of the Small-Pox is the most active in the moment of taking it in its recent and fluid state; the virus of the Vaccine disease is the same, as is likewise that of a rabid animal, of the viper, &c. Every day that these poisons are kept, they become progres-

* See Blane's Observations on the Diseases of Seamen, p. 216.
† Letter to Dr. Percival, on the Prevention of Infectious Fevers.

sively weaker and weaker, till at length their activity is entirely extinguished. An example of any one of them becoming more virulent by keeping cannot be produced. There is every reason to believe that a chemical action taking place in an animal poison, after its separation from the body, (and this is the kind of action which must take place,) has a speedy effect to destroy instead of increasing the virulence. The effects of fermentation on variolous pus seem to establish this conclusion. The result of chemical action on vegetable poisons appears to be the same; and there is probably no exception among all the virulent matters which are the product of organic nature.

In deciding on the contagiousness of diseases, it is essential to ascertain whether the morbid principle be a matter of animal or chemical production. The miasmatic poisons are unquestionably of chemical origin, formed without any febrile, morbid, or organic action of any kind; and therefore they cannot be confounded with contagions without a gross abuse of terms; and, on the other hand, the animal poisons, or such as are secreted by the vascular energy of the animal body, can alone, with propriety, be denominated contagions.

By considering Typhus as a branch of the Miasmatic diseases, we produce a simplicity, uniformity, and elegant *arrondissement* in the doctrine of fevers, which cannot but recommend it to all who admire the regularity of nature. The error of blending contagiousness with miasmatic poison withdraws men's attention from the noxiousness of personal and domestic filth as well as public nuisances. This is an object to which the care of the community cannot be too frequently or too loudly called. It is gratifying, both in a physical and moral point of view, to observe that the same means which contribute to our personal well-being, and to elevate us above the savage, viz. the progress of civilization and refinement, have led to banish the most loathsome and malignant distempers, to prolong life, and to diminish the prevalence and mortality of some other less fatal diseases. If cleanliness be conducive to decency, comfort, elegance, morality, intellectual activity, and the dignity of human nature, it is likewise eminently so to safety, health and long life.

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